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ABSTRACT

Schools fail to develop students' unique capabilities mainly because of large-group instruction limitations. Mutual Instruction (MI), a comprehensive peer assistance program involving all students in cross-age tutoring and counseling, is a sound and practical approach to restructuring the conventional lock-step, assembly-line program. Teaching--or helping others learn--is an essential learning experience benefiting both tutor and tutee. The main features of comprehensive MI schools include: (1) elmination of age-graded classrooms and normative grading, allowing students to progress at their own pace; (2) teachers working one-to-one with students to plan individualized programs and with small groups on cooperative learning projects and tutoring instruction; (3) inclusion of all student age groups (5-18) on the same campus; (4) provision of facilities for early childhood care and preschool development programs; (5) provision of well-staffed departmental study rooms and labs for each subject area; (6) a year-round operating schedule without scheduled classes; (7) membership of each student in an "MI family" of 25 schoolmates of all ages; and (8) the pursuit of enrichment in art, music, drama, sports, and special intellectual interests made possible by the efficiency of MI in cutting the time needed for mastering basic curricula. Included are comparison charts, an opinion survey, two appendices containing, respectively, an MI proposal and a narrative description of an elememntary MI school, 25 endnotes providing annotations on 40 references, and an annotated list of recommended reading including notes on ERIC reference sources. (MLH)

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RESTRUCTURING THE SCHOOL SYSTEM TO INVOLVE ALL STUDENTS IN PEER HELPING.

Edwin M. Swengel

August 1990

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DOCUMENT RESUME

EA

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ABSTRACT

Introduces concept of Mutual Instruction (MI), a comprehensive program of peer and cross-age tutoring and counseling involving all students of all ages in all subjects. Teaching--helping others learn--is an essential learning experience, stimulating and enriching cognitive and affective growth of tutor and tutee. Cites empiric evidence to support rationale for MI system.

Main features of a comprehensive MI school:

1. No age-graded classrooms. Learners progress at their own pace through developmental programs, receiving 1-1 peer tutoring and teacher guidance as needed to achieve mastery (required competence) in basic curricula. No normative (ABCDF) grading.
2. Teachers work as true professionals mostly on 1-1 basis with students, planning individualized programs, and with small groups on cooperative learning projects. Teachers instruct students in techniques of tutoring and provide on-going training.
3. Include students of all school ages 5 - 18 on same campus, and allow students to form productive long-term relationships with schoolmates of their choice. All students have access to all adult staff members.
4. Provide facilities for early childhood care and pre-school developmental programs on campus. Older students, under professional instruction and supervision, provide competent help as part of their essential pre-parenting training.
5. Provide departmental study rooms and labs for each subject area, staffed by 2 teachers and 2 trained aides. Students of all ages go to these rooms for specialized instruction, and to get tutorial help from trained tutors, under teacher supervision.
6. School operates year 'round without scheduled classes. Students attend the State-mandated days and hours, working through their individualized programs on their personal schedules.
7. To avoid alienation and "getting lost" in large school, each student belongs to an "MI family" of 25 schoolmates of all ages. They meet daily with a teacher and aide who serve as head counselors for their "children" throughout their school careers. The "family" provides a special sense and experience of belonging to a distinctive group dedicated to knowing about and caring for each other.
8. Efficiency of MI cuts learning time in half for basic curricula, leaving time for enrichment in art, music, drama, sports, and special intellectual interests. Students develop satisfying, creative hobbies for leisure time activities.

Notes and bibliography list over 40 references, mostly published in the 1980s.

EA 022 215

National Peer Helpers Association, Fourth Annual Conference
Northern Arizona University, Flagstaff, Arizona, June 23-26, 1990

Conference Theme: Peering into the Nineties

Presentation for Section on Program Models, Sunday, June 24, 10:30 A.M.

Restructuring the School System to Involve ALL Students in Peer Helping

Edwin M. Swengel, Education Consultant

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"Re-Structuring the School System to Involve ALL Students in Peer Helping"

Edwin M. Swengel, Ph.D., Education Consultant

Schools fail to develop students' unique capabilities mainly because of large-group instruction: age-graded classes at the elementary level, departmentalized classes at junior and senior high levels. Teachers do not have time to give students the individual attention they all need and deserve.

A comprehensive peer assistance program, involving all students as both helpers and helpees in academic and personal (social) learning, is a fundamentally sound and practical re-structuring to replace the conventional lock-step, mass-production, assembly-line program.

The following left-hand column A lists the essential elements of a comprehensive peer helping program, referred to elsewhere as mutual instruction (MI), which stresses the mutual benefits to helper and helpee. The right hand column B describes the essential contributions that a comprehensive peer helper/MI program can provide, and sketches the rationale for an MI program.

Abbreviations: PH = peer helping = MI = mutual instruction (comprehensive peer assistance)
PHer = peer helper (Peer includes same or cross-age student, tutor and/or counselor)

A. Essential Mutual Instruction Features	B. Contribution of PH and MI Rationale
1. Include preschool ages 2-4. Have all students ages 2-18 on same campus. Do not have age-group divisions.	1. Older PHers learn parenting skills through helping youngers develop mentally and socially in their critical early years.
2. Eliminate age-graded classes and any kind of ABCDF grading system. All students achieve mastery at their own pace with instructional programs geared to unique learning styles.	2. Trained PHers provide individualized help needed to achieve mastery. Pupils go as far and as fast as their interest and abilities carry them, regardless of age.
3. Teachers work as professionals, largely on 1-1 and small group basis with students. Plan individual study programs, group students into effective small-group (not over 4) cooperative units. Train students in peer helping techniques, and supervise.	3. Freed from classroom and large-group instruction, teachers have time for 1-1 attention. Training and supervising PHers is major responsibility, along with planning individualized programs, with parent input about special interest activities (see 5 below).
4. Flexible scheduling in all-year school. Pupils attend required days and hours, take their vacations as convenient; pick up their own study programs upon return. No fixed terms (quarter, semester, etc.); courses are developmental programs students go through independently or with small group.	4. PHers provide needed individualized help in beginning reading so pupils can follow written directions in developmental programs. Free of rigidly-scheduled classes, students can plan their individual and group study programs more efficiently, study more courses, or delve more deeply in some.
5. MI cuts time for required subjects in half. Students invest the time saved in their special interests: arts, music, sports, special subjects.	5. Developing interest and expertise in creative hobbies develops self-esteem, reduces TV watching, and prevents delinquencies.
6. "Family" grouping of 25 students (ages 5-18) provides on-going PH training and supervision, and sense of belonging to avoid alienation.	6. Each teacher (with an aide) heads a "family" and serves as long-time counselor. "Families" stay together to develop close ties.
7. Study rooms and labs for each subject, staffed by 2 teachers and 2 aides, who plan and supervise individualized study projects. Pupils of all ages intermingle; olders are mentors and role models for youngers.	7. Each teacher-aide team specializes in the lower or higher levels of their discipline; plan developmental programs, and adapt them for individual students and small cooperative study groups.
8. Optimum size of MI school: 1000-1200 pupils, (2-18 years), 40-50 teachers and 40-50 aides, head counselor, nurse, small administrative and clerical staff.	8. This provides a 25-1 student-teacher ratio, and a wide range of personalities and talents, in both adults and students, to enrich 1-1 and small-group contacts.

Schools must be re-structured so that all students of all ages derive the benefits of mutual instruction.

MUTUAL INSTRUCTION

An innovative school system based on collaborative, interactive learning

The ultimate solution to human problems, personal and social, is to produce individuals who combine highly-developed intellectual abilities with sensitivity to others' needs and rights. Mutual Instruction (MI) can possibly do this.

MI's unique feature: teaching while learning. At all ages from pre-school through college, students learn to teach what they learn, mostly in 1-1 tutoring situations.

The following sketch contrasts Mutual Instruction with the traditional age-graded, lock-step, competitive, ABCDF grading, large-group, teacher-dominated system.

	TRADITIONAL	MUTUAL INSTRUCTION (MI)
1.	Assumes children of same age are equally ready and able to learn.	Children's readiness to learn develops at different rates due to genetic and cultural differences.
2.	Assumes all children can learn at same pace from same materials presented to large group by teacher.	Assumes wide variations in learners, so provides different approaches; students give individual help to each other.
3.	In 5-hr school day, teacher has 2 min. per pupil per subject if every minute is spent in 1-1 help: 300 min.÷5 subjects÷30 pupils Actually, with 8 subjects and time for group work, a teacher has less than 1 min/pupil/subject/day.	Children are taught to help each other, using a variety of self-teaching, self-correcting materials adapted to different learning styles. Pupils can give necessary amount and quality of individual help. Teaching others is itself an excellent learning experience. Tutors always benefit greatly, as do their pupils.
4.	Amassing knowledge and skills is main goal of teaching. Students communicate their knowledge mostly to teachers and on tests.	Ability to communicate knowledge to help others acquire skills is of equal importance to amassing knowledge. Teaching what one has learned facilitates mastering it.
5.	Only top pupils expected to master subjects. System accepts less by giving grades B to F, and passes students to higher grades without their mastering essential skills for advanced work.	Provides necessary individual help and special instructional materials to assist slow learners. Does not assign pupils to age-graded classes nor give A-F grades. Every student moves thru subjects, not grades, and achieves competence in essential skills.
6.	Teachers' main responsibilities: present lessons, ask questions, give and grade tests, keep order, pass or fail students, keep records.	Teachers provide variety of self-teaching, self-correcting, easily tutorable materials, and teach students to help each other. Teachers teach teaching--how to ask good questions.
7.	Same-age students are kept together, have minimal contact with older and younger ones. One teacher and and one class group all year, K-6th.	Students of all ages mix to get competent help. Students supervise playground activities; have access to all teachers on staff--not restricted to assigned teacher or class.
8.	Assumes pupils' sense of security is based on receiving adult care and help.	Sense of self-worth and security comes mostly from giving needed services to others.
9.	Provides little opportunity to develop sharing and caring values by doing important, needed tasks.	Students continually give and receive help from a variety of students and teachers. Tutoring integrates cognitive and affective growth.

E. M. "Mac" Swengel

Random Notes on the Heart, Soul, and Mind of Mutual Instruction (MI)

A. "I understood my subjects much better after I taught them. Also, I got more interested in them from teaching them." (Most teachers affirm this.)

B. "I started my teaching career in a one-room country school. We'd never heard of a 'non-reader.' The older students took the little ones into their seats and would not give up 'til they taught them to read." (A professor of education.)

C. Primary teachers testify that seldom if ever does a child who has been read to on an individual basis, have serious difficulty learning to read. (In an MI school, even young readers can provide this valuable reading-readiness experience to beginners who need it.)

D. Reading, more than any other one subject, determines students' school success, which powerfully affects self-concept, social values, attitudes toward peers and teachers--and post-school life. (When Chief Justice, Warren Burger stated that 90% of criminals are "functional illiterates".)

E. Reading is taught best on an individual basis. In hundreds of experiments during the '60s and '70s, cross-age tutoring (CAT) dramatically improved reading--of both tutors and tutees. Tutors improved notably in comprehension, as much as 2 grade levels in 6 months. How? By learning to ask comprehension questions. In 1-1 tutoring, students learn to think critically. Dialog improves communication skills--talking and listening--of both parties.

F. The CAT experiments had an unexpected fall-out. Upper-grade teachers sometimes offered their "problem" pupils (trouble-makers not operating at grade level but with enough knowledge and skill to help beginners) to a CAT program. They suddenly became responsible, conscientious, patient, resourceful tutors. Students also proved to be effective peer-counselors for fellow-students with behavior and emotional problems.

G. Tutor and tutee simultaneously upgrade their intellectual skills and develop warm concern for each other. Both learn to listen, think, ask probing questions. In contrast to computer tutors which can only wear out, human tutors improve with use. A computer cannot put a reassuring arm around a struggling pupil's shoulders, laugh at mistakes, play at recess, walk home together. A machine, no matter how sophisticated, should never usurp a vital function all persons need for their full human development.

H. MI postulates that tutoring is an essential part of learning for all students, and should be the central feature of schooling from pre-school through college. All students benefit from the communication skills they learn to use in tutoring sessions.

I. Modern household technology has eliminated most chores that children formerly did, which even tho' onerous, gave them some sense of contributing to the family welfare. Most children are now forced to live as parasites, receiving much but giving little. Parasitism de-humanizes. Children of all ages need to use their knowledge and skills in meaningful, responsible ways to help others. Schools desperately need to provide individualized instruction. MI provides ample opportunities for all students to profit by giving as well as receiving it.

J. How does an MI school operate? Rooms are organized not by grade levels but by subjects. Pupils go as fast and far in each subject as their interest and abilities allow. Teachers provide programmed materials, train and supervise tutors, check pupils' progress, and help them plan and pursue a balanced program.

K. We tend to resist and resent those who dominate us, even when they serve--as do adult teachers. We care most for those we serve. By teaching students to serve and be served, MI nurtures cooperative, supportive, egalitarian values. Carried into adult life, such values--supported by critical thinking--should produce constructive solutions to human problems.

* *

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Reaction and Opinion Survey

"Re-Structuring the School System to Involve ALL Students in Peer Helping"

Directions: In the blanks to the left of each statement about a comprehensive peer assistance school system, please enter a number based on this 7-point scale of agreement, from total disagreement 1 to total agreement 7.

DISAGREE	UNDECIDED	AGREE
1=Totally 2=Strongly 3=Mildly	4=Uncommitted	5=Mildly 6=Strongly 7=Totally

Please add your comments in space provided after each statement, and on reverse side.

..... 1. The public schools, restructured on a comprehensive peer assistance/mutual instruction basis, can best provide high quality early childhood education for 2- to 4-year-olds.

..... 2. MI schooling should be continuous, not age-graded, nor divided into separate schools for age groups. All ages on the same campus facilitates cross-age peer helping.

..... 3. With trained peer assistance, all students can achieve mastery in required subjects, so any form of ABCDF grading is unnecessary, eliminating failure and any sense of inferiority.

..... 4. Teachers should work as do other professionals, mostly on a 1-1 and small group basis with students, concentrating on developing their unique capabilities.

..... 5. Schools should operate year 'round, without rigidly-scheduled classes. Teachers help students plan flexible individualized study programs that can accommodate their work and vacation schedules.

..... 6. By individualizing learning and providing trained tutorial help, most students can master required subjects in about half the usual time required. Tutoring what they become proficient in helps students master the material, through creative repetition.

..... 7. Time saved (due to tutoring) should be spent in developing students' unique talents or interests, to fill their leisure time creatively and thus prevent delinquency.

..... 8. Students of all ages need a "home base," a larger group they can belong to, whose members develop special long-term relationships with each other and with the same teacher. The MI "family" can provide the security of a special on-going group membership.

..... 9. Students of all ages need specialized rooms in which to study each discipline under the direction of specialists, so departmental study rooms and labs should be open to students of all ages so they can share knowledge, interests, and enthusiasm.

..... 10. A school of 1000-1200 students of all ages and about 125 adults (teachers, aides, and others) is small enough so that everyone eventually can know everyone else, yet large enough to provide continually new experiences and establish new personal relationships with a wide range of persons with different personalities, interests, and talents.

..... 11. The Peer Helping movement can and should take a leadership role in re-structuring the entire school system to involve all students, as both helpers and helpees, throughout their school life.

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NPHA 4th Annual Conference, June 24, 1990

Reaction and Opinion Survey

"Re-Structuring the School System to Involve ALL Students in Peer Helping"

N = 11
(F = 10)
(M = 1)

Directions: In the blanks to the left of each statement about a comprehensive peer assistance school system, please enter a number based on this 7-point scale of agreement, from total disagreement 1 to total agreement 7.

DISAGREE — 1=Totally 2=Strongly 3=Mildly | UNDECIDED — 4=Uncommitted | AGREE — 5=Mildly 6=Strongly 7=Totally

Please add your comments in space provided after each statement, and on reverse side.

SUMMARY
Total votes
121 (11x11)
Total 1,2,3
13/121=11%
Total 4 (?)
18/121=15%
Total 5,6,7
90/121=74%

Votes per Scale Value
1 = 3
2 = 3
3 = 7
4 = 18
5 = 38
6 = 34
7 = 18

Rank — Pct. Agree

9th ..68% 52/77* 1. The public schools, restructured on a comprehensive peer assistance/mutual instruction basis, can best provide high quality early childhood education for 2- to 4-year-olds.
Scale: 1 2 3 4 5 6 7
Scores: 1 1 3 2 3 1
*(100% agree = all 11 votes at 7 = 77)

11th ..53% 41/77** 2. MI schooling should be continuous, not age-graded, nor divided into separate schools for age groups. All ages on the same campus facilitates cross-age peer helping.
Scale: 1 2 3 4 5 6 7
Scores: 1 1 3 1 5
**Sum of ScoresxScale value = Agreement
1 + 2 + 9 + 4 + 25 = 41 41/77=53%)

7th ..71% 55/77 3. With trained peer assistance, all students can achieve mastery in required subjects, so any form of ABCDF grading is unnecessary, eliminating failure and any sense of inferiority.
Scale: 1 2 3 4 5 6 7
Scores: 1 1 5 3 1

6th ..75% 58/77 4. Teachers should work as do other professionals, mostly on a 1-1 and small group basis with students, concentrating on developing their unique capabilities.
Scale: 1 2 3 4 5 6 7
Scores: 2 4 5

10th ..58% 45/77 5. Schools should operate year 'round, without rigidly-scheduled classes. Teachers help students plan flexible individualized study programs that can accommodate their work and vacation schedules.
Scale: 1 2 3 4 5 6 7
Scores: 1 1 4 5

2nd .83% (tie) 64/77 6. By individualizing learning and providing trained tutorial help, most students can master required subjects in about half the usual time required. Tutoring what they become proficient in helps students master the material, through creative repetition.
Scale: 1 2 3 4 5 6 7
Scores: 1 2 6 2

1st .90% 69/77 7. Time saved (due to tutoring) should be spent in developing students' unique talents or interests, to fill their leisure time creatively and thus prevent delinquency.
Scale: 1 2 3 4 5 6 7
Scores: 2 4 5

6th .79% 61/77 8. Students of all ages need a "home base," a larger group they can belong to, whose members develop special long-term relationships with each other and with the same teacher. The MI "family" can provide the security of a special on-going group membership.
Scale: 1 2 3 4 5 6 7
Scores: 2 5 2 2

5th .77% 59/77 9. Students of all ages need specialized rooms in which to study each discipline under the direction of specialists, so departmental study rooms and labs should be open to students of all ages so they can share knowledge, interests, and enthusiasm.
Scale: 1 2 3 4 5 6 7
Scores: 2 5 2 2

8th .70% 54/77 10. A school of 1000-1200 students of all ages and about 125 adults (teachers, aides, and others) is small enough so that everyone eventually can know everyone else, yet large enough to provide continually new experiences and establish new personal relationships with a wide range of persons with different personalities, interests, and talents.
Scale: 1 2 3 4 5 6 7
Scores: 1 2 1 2 3 2

2nd .83% (tie) 64/77 11. The Peer Helping movement can and should take a leadership role in re-structuring the entire school system to involve all students, as both helpers and helpees, throughout their school life.

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Scale: 1 2 3 4 5 6 7
Scores: 1 2 6 2

National Peer Helpers Association, 4th Annual Conference, June 23-26, 1990
Northern Arizona University, Flagstaff, Arizona
Conference Theme: PEERING INTO THE NINETIES; Section on Program Models

A Position Paper

Restructuring the School System to Involve ALL Students in Peer Helping

Edwin M. Swengel
Education Consultant

At one of the NPHA workshops, a colleague introduced me as a "radical." Whatever his meaning of that term, I take it as a compliment, because "radical" literally means "root." A "radical" tries to get at the root of a problem, and hopefully offers a root solution. It is through the roots that growing things take most of the substances that upper growth transforms into flowers and fruit.

The school plant is sickly. The flowers (pupils) fade and many drop off before reaching full bloom. Many of those who mature and bear fruit (high school graduates) are of poor quality, still lacking in knowledge and skills, some functionally illiterate.

Trying to identify the causes of school failure, critics commonly list a variety: poor home environments, too much TV, materialistic advertising, ill-chosen role models from the entertainment and sports worlds, poverty, racism, poor teacher preparation, lack of sufficient funding for schools . . . .

These deficiences do contribute, but the school itself, as traditionally structured, is the major root cause of its own problems, as well as problems of society. Adult society is composed of individuals who have spent the best hours of their formative years in school. Society is the individual writ large. "The child is father to the man." Adult society grows from its roots in the society which dominates childhood and adolescence—The School.

Many critics, driven to desperation by the centuries-long failures of educational reforms to produce the desired qualities of mind and spirit in all students, are now calling for radical, fundamental restructuring. For example, the plea of Mary Hatwood Futrell, immediate past president of the National Education Association:[1]

> The time has come for all of us to remove our blinders and take a hard look at the many basic school structures that we've taken for granted for so long. Let's examine and question age grouping, tracking, labeling, grading, lockstep 'teacher-proof' curriculums, school bells—all the remnants of the industrial assembly line model of education. Indeed, anything in schools that gets in the way of teaching and learning must be questioned and reevaluated—with teachers playing a key role in the reevaluation process.

What is the root problem with conventional schooling? Why does it fail with so many students?

In simplest terms: Schools fail to develop self-esteem--in students, in teachers and administrators, and in parents. They all feel some degree of failure to achieve what they all believe is possible intellectually, esthetically, physically, emotionally,

spiritually. Schooling, promising to prepare all graduates for confident, successful adulthood, succeeds mainly in convincing all but the top 10% or so that they are not really very good at anything, intellectual or social.

The California Task Force to Promote Self-Esteem and Personal and Social Responsibility recently completed (in 1989) a 3-year intensive study of the relationship between self-esteem and six major problem areas of our society: the family (including child abuse and teenage pregnancy), education and academic failure, drug and alcohol abuse, crime and violence, poverty and chronic welfare dependency, and alienating work environments. Expert testimony from researchers and practitioners in all these fields connected lack of self-esteem to failure, positive self-esteem to success.[2] (Why should it have taken 3 years and thousands of hours of testimony to establish this? The Task Force initially suffered considerable cynical criticism and ridicule, now being muffled with the publication of its findings.)

The Task Force definition of self-esteem: "Appreciating my own worth and importance and having the character to be accountable for myself and to act responsibly toward others."

(Almost a decade earlier, Patricia Berne described it less formally: "Healthy self-esteem is a capacity to see oneself as valuable and competent, loving and lovable, having certain unique talents and a worthwhile personality to share in relationships with others."[3])

Both definitions are simple and straightforward, balancing self-interest and self-responsibility with concern for others. What we need to know is how everyone can develop a high level of self-esteem, because the statistics on failures in those six problem areas are alarmingly high: divorce rates still around 50%; 2 million child abuse cases reported annually (reported cases estimated to be only 40% of actual cases); the majority of teen-age parents go on welfare and tend to stay welfare-dependent; 10 million alcoholics and 3 million cocaine addicts nationwide; jails overcrowded and violent crimes increasing . . . . Is there any area of society in which the quality of life is significantly improving? Do we as individuals or as a society have a firm handle on any of these problems?

They all are connected with low levels of self-esteem. The majority of the Task Force members believe the relationship is causal: low self-esteem causes or contributes heavily to those social problems. However, the Task Force ended its study on an optimistic note, stating that if ways can be found to raise self-esteem in all citizens to high levels, this would provide a "social vaccine" against these social ills. A very, very big IF.

Very big, but far from impossible, if schools were restructured to produce high self-esteem in all students. That can be done, using well-tested materials

and methods readily available—and well-known to all who have been involved in the peer-helping movement over the past 30 or more years.

(The term "peer" as used herein covers pupils of all ages, not limited to same- or near-age peers. School enrollment classifies them all as peers).

This "social vaccine" must be administered individually to each and every child, starting pre-school. The public school is the only institution that can administer this "social vaccine" because it is the only institution that has a legal right to do so. Society cannot require parents to attend classes, nor control the sexiness and materialistic appeals of advertisers, nor censor TV violence and its generally tawdry, superficial portrayal of romantic love. All society can do with adults is to punish lawbreakers and try to control the tendency toward wrongdoing by regulations and appeals for ethical conduct. Not much positive, consciously-planned and directed education is possible with adults. By the time students leave the classroom, their character roots are down. The young adult plant is maturing, and as the twig has been bent, so shall it continue to grow.

The public school system is our only practical and dependable means of restructuring society, mostly by prevention. To do this, the school itself must be an "esteeming" society, one that creates in <u>all</u> students the intellectual knowledge and skills needed for everyday living and to earn a decent livelihood. Equally important, schooling must develop values and attitudes that include concern for others, necessary to sustain a cohesive, democratic society.

Why do schools, as now structured, generally fail to produce high self-esteem and positive self-concept? Because:

(1) Schools do not educate every child as a unique individual; schools operate on an assembly-line, mass-production basis, as if same-age children are as uniformly processible as wood and steel and plastic.

(2) Schools do not give learners much voice in choosing what they learn, in what order, how they learn it, with whom, at what pace; students get very little real-life experience in taking responsibility for themselves and for others, and few opportunities to exercise personal judgment in important matters.

(3) Schools deny students access to schoolmates older and younger with whom they might establish mutually beneficial relationships; the most powerful influence is that of older peers, but schools limit most contacts to same-age peers.

(4) Schools grade students (ABCDF) according to how much they learn in a given time span, instead of giving each one the time needed to reach the competency level required to proceed to higher levels; thus, most students are continually ill-prepared and are under constant fear of poor grades or failing, making their learning fear-ridden rather than enjoyable as it should be.

(5) Schools fail to provide individualized instruction (including 1-1 tutoring) to help every student succeed, academically and in personal relationships.

(6.....) And much more the conventional lock-step, age-graded, rigidly-scheduled school does and does not do which contributes to students' low self-esteem, mostly by stressing competition over cooperation, competition in which only the top few can ever win.

Peer Assistance to the Rescue

The main reason the peer assistance movement has taken root and is vigorously growing is that students who get involved in peer helping raise their self-esteem, especially peer tutors and peer counselors. This identifies the root solution to the root problem:

> Re-structure schools on a peer assistance basis so that ALL students are involved as both helper and helpee, at all ages and in all subjects and activities, throughout their entire school life.
>
> Center all instruction on this basic concept:
>
> Teaching--helping others learn--is an essential, invaluable part of the total learning process, for heart as well as head.

THE MUTUAL INSTRUCTION SCHOOL

The Appendix contains a somewhat detailed description of a type of school which can provide all the experiences children and youth need to develop the high levels of self-esteem that would "vaccinate" them against becoming delinquent in any way. In a positive way, it would give them the knowledge, skills, and spirit to enjoy life fully. The concept is designated mutual instruction (MI) to indicate that it is a reciprocal interaction between helper and helpee, which stimulates both academic and social growth in each partner.

"Multiple Intelligences" MI—A Complementary Concept

"MI" is also the initials for another radical theory—"multiple intelligences," propounded by Howard Gardner of the Harvard Graduate School of Education. His "MI theory proposes that people use at least seven relatively autonomous intellectual capacities--each with its own distinctive mode of thinking--to approach problems and create products. These include linguistic, musical, logical-mathematical, spatial, bodily-kinesthetic, interpersonal, and intrapersonal intelligences."[4]

These 7 (or more) intelligences all deserve as much attention as the "left brain" two that conventional schooling almost exclusively and lopsidedly emphasizes, the linguistic and logical-mathematical. The "whole child" uses all intelligences; they occur in differing configurations of varying strengths in every learner. If given balanced development, these would contribute a sense both of wholeness and of uniqueness that are important components of self-esteem. The mutual instruction

MI school is flexibly structured to provide personalized education, tailor-made to fit each student's special pattern of intelligences. The reader may confidently combine both concepts under the MI initials, as they are totally compatible.

Mutual Instruction--An Evolutionary Leap

The mutual instruction MI concept is radical, but more evolutionary than revolutionary. It takes a quantum leap forward in the direction of genuinely individualized education of the whole person. This is an ideal which reforms have been aiming at and missing ever since schooling turned formal, and mistakenly adopted teacher-and-class as the basic unit of instruction.[5]

The most radical MI reform is to eliminate the classroom unit. This would free teachers to be truly professional, to work with clients (students) on a 1-1 basis, as do doctors, lawyers, engineers, et al. Teachers can perform far more effectively in the MI system. Freed from regular large-group instruction and from non-professional classroom control and management, they can devote full time and energy to students as individuals. Dedicated teachers long to do this, but are frustrated by the lock-step system that demands that they teach The Class and try (impossibly) to move all 30 pupils through a single instructional program together. The MI teacher is a coach who plans individualized programs for students so as to enhance their strengths and overcome or compensate for weaknesses. Successfully-coached students become on-campus role models for other students, personally available to help.

Along with eliminating the age-graded, lockstep system, out goes ABCDF grading, replaced by 1-1 tutoring and small-group cooperative learning to help every student achieve competence in basic knowledge and skills.

A humane, natural community does not segregate or group its members by sex, race, ability, or age. The MI school enrolls learners of all school ages 5 to 18 on the same campus, and reaches down to include the pre-schoolers, ages 2 to 4. Additionally, provision should be made for on-campus infant care for families unable for whatever reason to provide proper home care, and for teen-age parents who remain in school.

The social cost of inadequate child care in these highly critical infant and pre-school years far outweighs the additional cost of publicly-supported early childhood care.[6] This need not and should not be legally required as is K-12 school attendance, but should be available to all children. Even the best of homes cannot provide the variety of stimulating experiences young children need for optimum development.

In evaluating the expanded educational program our society now needs, we must weigh long-term cost v. benefits. "If education seems expensive, try ignorance."

Neglect is cheap, but remediation (which is not always possible) is very, very costly.

An MI system, along the lines sketched, in one school generation--18 years or less--could produce a graduating class of individuals 99.9% "vaccinated" with high self-esteem that would wipe out or reduce to minimal and manageable levels all the social ills that presently appear incurable. (MI of course cannot cure persons who now have AIDS, but it could prevent its further spread. Individuals with a solid self-concept and high self-esteem are psychologically and morally unable to engage in acts that lead to contracting AIDS. The only further victims would be those who contract it accidentally.)

Persons who are intellectually and morally strong do not abuse or exploit themselves or others, nor allow anyone else to do so.

Basic Features of the Mutual Instruction School

Three basic changes--(1) a flexibly-structured, non-graded system; (2) mastery-learning of basics plus personalized programs that use all intelligences to develop unique talents and abilities; (3) all ages on the same campus to facilitate cross-age peer helping--are the most radical changes required. However, none of these is brand new, but they have never been combined in the pattern proposed. They root the MI system in the fertile soil of peer assistance, assuring luxuriant growth of self-esteem.

The model MI school is a realistic micro-society serving not over 1000 to 1200 children and youth, ages 2 - 18.[7] (Enrollment would likely be smaller in rural areas.) Teachers and trained paraprofessional aides (analagous to nurses who aid doctors) plus administrative and maintenance personnel would produce an adult-pupil ratio of around 1-12. The all-ages MI school can serve its community as a cultural center. It should be within a healthful walking distance of all families, eliminating the need, expense, and pollution of busing and car pooling. (A bus or car pool ride is not a highly educative way to begin and end a school day).

In view of the increasing numbers of families of working parents who need all-day child care, the school should provide this from 7 A.M. to 6 P.M. (or for whatever hours are needed). Trained paraprofessionals can supervise before- and after-school activities that reenforce and enrich the official school program.

The MI school operates year 'round, without quarter- or semester-scheduled classes. All courses are available in self-study units which students begin when ready, and work until they achieve criterion competence, getting peer help and teacher assistance as needed.

"He who teaches is twice taught"

Over 30 years of experience world-wide with peer and cross-age tutoring programs has established beyond question that helping others learn what one has recently

mastered is the most creative and thorough way to review the material, fix it firmly in long-term memory, widen and deepen understanding of concepts, and increase interest in the subject.[8] Tutoring involves asking questions, judging the validity of answers, re-framing questions and re-thinking answers, refining strategies, taking different points of view into consideration, seeking relevant analogies, going beyond the information given to make inferences. All the higher-level thinking skills are used intensively in tutoring, beginning when an 8-year old discusses The Three Little Pigs with a 5-year-old. Being tutored by trained tutors teaches the tutee how to tutor, which is mainly the art and skill of asking questions to determine how accurately information has been learned and how it can be used to understand new concepts and to enrich and expand related ones.

School Time for the "Frills"

By involving all students in both helper and helpee roles, the mutual benefits of such individualized instruction can cut in half the time required to learn the basics, giving students time and confidence to engage in a wide variety of artistic, dramatic, musical, and athletic activities, and to develop special intellectual interests, all of which build self-esteem. Having access to all other students and to all adult staff members on campus, every learner can find a number of schoolmates and teachers with whom to establish productive, long-term relationships.

"The MI Family"--For Belonging

The MI school provides a special membership in the "MI Family" (described in the Appendix). This is a group of 25 students ranging in ages from 5 through 18. They meet daily with a teacher and aide team who serve as long-term head counselors, responsible for the comprehensive program planning and over-all supervision of each family member. Especially close relationships are developed within each family, as every member is both a Big and Little Brother/Sister to other members. This on-going, uninterrupted family membership prevents students from becoming lost, alienated, or cut adrift in the larger school community. The family provides especially warm support for new and transfer students, and for members experiencing stress and strain from a difficult home life, health problems, romantic turmoil, or from other childhood and adolescent traumas.

In essence, the MI school is designed to assure simultaneous success in academic and social activities. Tutor and tutee sharpen their grasp of subject matter through dialog, and at the same time and through the same process, learn to understand, respect, and care for one another. All students repeat this mutual learning experience with a variety of other students in different subjects and activities. Teachers arrange for every student to have a wide range of peer tutoring and counseling experiences, both as helper and helpee, and work in heterogeneous cooperative

learning groups. Through a school lifetime of these integrated cognitive-affective successes, all students will develop solidly-grounded, well-earned self-esteem and self-confidence that will keep them involved in positive, creative, constructive activities, effectively "vaccinated" against delinquency.

Mutual Instruction Solves the Functional Illiteracy Problem

The root cause of most academic problems is failure to learn to read and write well. Of all school-taught subjects, these two especially require individualized instruction, because children's verbal abilities develop at different rates. Children must be able to understand others and to express their own ideas, and they need a considerable vocabulary and some fairly sophisticated thinking skills before they can successfully and enjoyably learn to read and write. By having pre-school children on campus, older children can spend time individually conversing with each child, reading stories, guiding their interests toward a variety of things, and helping develop their abilities to think and talk about their experiences. The olders can gradually and naturally get the little ones started in reading and writing, at a time initiated by each child, not at a time the school arbitrarily sets for beginners to start formal instruction.[9] Continued 1-1 tutoring assures steady but unpresssured progress leading to success in reading and writing in all subjects.

MI Provides Genuinely Personalized Instruction

The MI school provides the two essential elements required for truly personalized instruction—elements that conventional schooling cannot provide: (1) freedom to teachers to give adequate time and attention to planning and supervising students' personal programs; and (2) trained tutor-power to provide on-going 1-1 help as needed. Each student tackles a new subject when ready--able and interested--and proceeds to mastery as slowly or as rapidly as ability and interest allow. Always learning at the "growing edge" of their minds, students waste no time doing busy work that is too easy, nor do they fail at assignments beyond their current abilities, tasks which they later can accomplish readily when natural development and further preparatory experiences have laid the groundwork.

Because children enjoy learning, every success has a "Cracker Jack effect:" the more they learn, the more they want to learn. MI's rich smorgasbord of attractive learning provides the external stimulation that some learners may need to keep them hungrily eager to try new and different courses. For most learners, successful learning is its own reward and is a powerful internal stimulus to learn more.

Strengthening the Family through Pre-Parenting Experience

Social critics bemoan the weakening of the family, while affirming that the family, parents especially, is the most powerful influence in forming a child's basic character. Unfortunately, human beings are not born with parenting skills, even though, of

all life skills, these are critically important. How can they best be learned? By direct, continued, repeated, literally hands-on experiences with many different youngsters in differing relationships of learning and play, with laughter and tears, joy and pain. By including pre-schoolers and infants on campus, the MI school provides a laboratory for inservice pre-parent training. A striking example of mutual instruction: the little ones "teach" olders how they should be handled, under tutelage and supervision of professional early childhood teachers; olders help the little ones learn how to get along with others and learn the developmental lessons of early childhood.[10]

Mutual Instruction Concerning Substance Abuse

Working with young children who have behavior and learning problems, due to being born of alcoholic and drug-addicted mothers, should forcefully impress on teenagers the fact that alcohol and drug abuse is not a strictly personal matter, but imposes severe detrimental effects on others. Working with addicted mothers and fathers of such children would provide additional mutual instruction.

Taking on such responsible activities could fulfill the social service that many schools now require for graduation. Because MI students do their course work on their personal schedules, these can easily be adjusted to accommodate community service work off-campus. Such work can be coordinated with each student's special interests to make it more meaningful than if students were sent away in government programs to do assigned work that might not be personally beneficial (in case the government institutes a social service draft, as is being urged by some legislators).

MI does not promote narcissistic self-interest; it aims to develop each student's personal strengths and abilities, and puts them at the service of others, to obtain the benefit of mutuality: To strengthen oneself, strengthen others.

Challenge, Promise, and Failure of Similar Reforms

A challenge to educators was issued almost 30 years ago (1961) by a University of Illinois researcher, J. McV. Hunt, interested in how intelligence develops. On the basis of considerable evidence that average- and low-IQ children and youth often made astoundingly large IQ gains when put into intellectually stimulating and supportive environments, Hunt predicted that the IQs of all children (except those with severe congenital deficit) could be raised a "substantial degree . . . of the order of 30 points of IQ." This would require the total educational environment to offer optimumum learning opportunities to match each learner's readiness and ability. Hunt challenged educators to solve this "problem of the match," beginning in the very early pre-school years.[11]

About the same time, (but not in response to Hunt's challenge, apparently) some educational researchers began to take a somewhat revolutionary view of school learning. They suggested that all students could master the basic school subjects if given enough time, along with some individualized, personalized attention to their different styles of learning. John B. Carroll was among the first to suggest this.[12] In 1962, Fred S. Keller began experimenting with programmed lesson material at the college level, leading to his Personalized System of Instruction (PSI).[13] Benjamin S. Bloom took up the idea a few years later with his proposal for "mastery learning."[14]

In mastery learning (ML), teachers specify what is to be learned, (state objectives clearly), make appropriate assignments, give formative tests every week or so to determine if students have mastered the material--reached criterion level. Those who have not are given "corrective" work, while the faster-learners who achieved mastery do enrichment work. When all students have mastered the unit's objectives, the whole class moves on to the next unit, which builds on the previously mastered knowledge and skills.

Mastery learning has been operating in schools across the nation for over 20 years, claiming considerable success in raising the average accomplishments of ML students significantly above the average of students receiving conventional classroom instruction, statistically about one standard deviation higher. This raises the average of ML students to the 84th percentile compared with the 50th percentile average of conventionally-taught students. (Note that this is a percentile average, which means that some students were below this level and some above, so ML fails to bring all students to mastery.)[15]

Bloom and his doctoral students at the University of Chicago searched for classroom teaching/learning techniques that would produce student achievement equal to that of 1-1 tutoring, which produced a "2-sigma" (2 standard deviations) gain over conventional group instruction. Under tutoring, the average student outperformed 98% of students who received conventional group instruction.[16] This 2-sigma jump is roughly equivalent to Hunt's projected gain of 30 points of I.Q.

Herbert J. Walberg and his colleagues identified the conditions of learning needed to raise every student to mastery level.[17] (The basic item of faith among ML proponents is that every learner does have the ability to master a core curriculum if given enough time and individualized assistance.) Walberg's top four requirements for mastery learning: (1) reinforcement (reward for success, given soon); (2) acceleration (freedom to move ahead as fast as material is mastered, and to branch out beyond the basic program—enrichment); (3) reading training (ability to do the types of

reading and thinking required for the subject under study); and (4) cues and feedback (immediate help when the learner gets off track and immediate feedback to keep him/her on track). Put together in an individualized, time-free program, their combined effects should produce Bloom's 2-sigma gain. These ideal learning conditions--the environmental "match" for each student's readiness to learn--must be available continually from early childhood on to accomplish Hunt's 30 points of IQ gain, across the board for all learners.

An MI system can fully meet all these conditions, but the age-graded classroom system cannot possibly meet them. Bloom, discounting the potential of cross-age peer tutoring, regrets that schools cannot afford the 1-1 tutoring which produced a 2-sigma gain. He used professional teachers as tutors in his experiments. However, other experiments have shown that trained student tutors are as effective as adult tutors, and often moreso, especially with slow learners. Furthermore, in a comprehensive MI program that begins in infancy, learners would seldom be so deficient as to need a 2-sigma boost. On-going peer tutoring in personalized programs would keep all students developing optimally.

Cooperative learning, currently a popular and wide-spread reform, divides same-age classes into small groups, 2 - 4 students per group, to do a lesson cooperatively, rather than each child working independently.[18] However, cooperative learning is practiced mostly in conventional single-age classes, so it can only partially individualize instruction. It is not appropriate for the primary (K-2) level, where most children desperately need much individualized 1-1 attention. Without this, the slowest-learning pupils get farther and farther behind, accumulating academic deficiencies and developing negative attitudes that cooperative learning cannot effectively remediate. The fastest-learners may be frustrated by being held to a too-slow pace, and they also may develop antagonistic attitudes. Even the mid-range "average" learners fare no better, for group instruction rarely meets any pupil's unique needs and abilities efficiently.

Ready to Move. Why Stand Still?

What more is needed to move administrators and teachers to restructure schools so as to achieve these long-sought goals, now that we know how?

What is needed is to slaughter (or turn out to pasture) that most sacred of school cows: the age-graded, teacher-dominated, time-bound, rigidly-scheduled classroom.[19] It prevents teachers from teaching and learners from learning as unique individuals. Any good teaching/learning method is stifled when put into the conventional classroom structure. For example, in mastery learning programs, the slowest pupils may require from 3 to 5 times as much time to reach mastery as the fast learners. Teachers cannot hold the whole class back while doing thorough

"corrective" work with slow learners, who as a result do not achieve mastery, not from lack of ability, but from lack of time to keep up with their age mates. The laudable ML goal of mastery for all thus becomes practically impossible in an age-grouped system. However, it is possible in an ungraded system that (1) ignores chronological age as an indicator of ability and readiness, and (2) provides the 1-1 tutoring needed for efficient mastery learning. If we should have learned anything from much of the nonsense surrounding the IQ concept, it is that at every chronological age, children have widely-varying developed intellectual abilities. Age-grouping is psychologically unsound and unwarranted, and has proven to be pedagogically disastrous. There is no way to make it efficient—or humane.

Advocates of mastery learning and cooperative learning, and most other reformers who strive for individualization and democratic equity, seem blind to the crippling restrictions of the conventional classroom. Why these reformers flinch from attacking this bastion is a major mystery, for they bravely assault other traditional practices. But they stop short of calling for the only comprehensive restructuring that can accomplish their goals: a totally non-graded, genuinely personalized peer-assistance system, in which teachers professionally deal mostly 1-1 with students. The technology needed is available and well-tested; computer programs are available to keep track of individual student progress. Pupils, teachers, and parents would love it. So would administrators, once it becomes established, after which it would be practically self-governing and self-correcting.

The blame for school failures should fall 90% or more on The System, not on school personnel, who on the whole are as conscientious, dedicated, well-trained, and ethical as the members of any profession. Unfortunately, teachers and administrators are condemned to work in an inherently unworkable system. Until that stark fact is understood and admitted, further attempts to improve the unimprovable classroom system will continue to fail. Reluctance to move out of a faulty but familiar structure is understandable when there is no better place to go. But MI is a safe, secure haven.

SuperTeachers Welcome in MI, But Not Required

Also to be uprooted and discarded is the hallowed notion that the adult teacher should and can do all the direct teaching of subject matter, all the supervision of learning, and all remediation (and file reams of paperwork having no direct connection with classroom instruction.) All this is mathematically impossible simply on the basis of available time and energy. Conscientious teachers burn out trying to be SuperTeacher and accomplish the impossible. Anyway, teachers should not usurp jobs that their students can do effectively and for their own benefit. There are wholly professional responsibilities aplenty, which students cannot understake,

to fill MI teachers' time.

The Promise of Peer Tutoring

"Qui docet, discit" ("He who teaches, learns") is attributed to John Amos Comenius, a 17th century reformer. Similar testimony that teaching is a highly efficient way to learn has been in pedagogical literature since ancient times. This solid stone which curriculum builders have so long and blindly rejected must now become the foundation stone of a strong new structure of schooling: "Learn to teach and teach to learn."[20]

Although professionals do not guarantee that a proposed treatment will succeed, they are obliged to offer supporting evidence for their claims of probable success. The appended list of references and those in the Notes are only a tiny tip of a mammoth iceberg of empirical evidence implicitly supporting the proposition that a comprehensive, all-ages, all-subjects mutual instruction system would go well beyond what has heretofore been achieved in enlarging the minds and hearts of all students.

These experimental reports are often criticized for methodological deficiencies inherent in real-life classroom research. However, the standard experimental-control group model, taken from the physical and biological sciences, is not really appropriate for measuring effects on human individuals. This research model reports the average score of each group and indicates the range of scores above and below that mean by the standard deviation. The case history approach is appropriate, as it may reveal why a treatment is effective with certain students and fails with others. This kind of information is needed to improve programs, because of its diagnostic/prescriptive quality.

However, even with inappropriate statistical processing, results of peer programs come out positive in terms of improving students' academic performance and their attitudes toward learning. A meta-analysis of 65 objective, comparative studies of peer tutoring yielded this conclusion: "Students who participate in tutorial programs--both as tutors and tutees--show greater cognitive growth and attitudinal gains than do students who are not involved in such programs."[21]

Measured changes--improvement--in self-concept are generally non-significant statistically, for several very good reasons. Self-concept (including self-esteem) is a global evaluation of one's self. One may question how well a pencil-and-paper test can reflect such a subjective rating, especially with young children. Also, lamentably, most peer tutoring programs are of short duration, usually lasting only a few weeks or months, occasionally for most of a school year. Very few have run for several years, long enough to determine the cumulative effect on students—except peer counselling programs in junior and senior high schools

that may involve the same students for several years. Further, involvement in a peer program is only a minor, incidental part of most students' entire school life, so the time spent—seldom more than an hour or two weekly--cannot be expected to dominate students' overall evaluation of themselves. When their peer involvement does become central and is successful, students' self-concept and self-esteem do show highly significant gains.

What should be measured is how students feel during and about their peer involvement. When these evaluations are targeted, the results are highly positive, if students have been adequately trained to do the job, and if they were adequately supervised and had continuing support and inservice training. Otherwise, tutoring or counseling can be a failure experience, which depresses a student's self-concept. The tutee or counselee will likewise get no lift from the experience. As in all activities requiring special skills, competence is required for success, and success is required for a positive self-concept and for self-esteem.[22]

Successful experiments have demonstrated beyond question that students who are properly trained and supervised (even the mentally and emotionally handicapped[23]) do effective tutoring and counseling, and do gain self-confidence and self-esteem during their peer-helping activities. So we can confidently predict that all students would similarly gain academically and in self-esteem if regularly involved in well-managed peer programs throughout their school careers. Students who have participated in peer tutoring programs almost unanimously say they would like for all their course work to be done on an individualized and cooperative-learning basis, without grades other than that given for achieving mastery (which usually rates an A, if for some unwarranted reason that sacred cow is kept).

There have been no longitudinal studies of comprehensive peer-centered programs (none yet exist), so the cumulative effects are not empirically known.[24] However, common sense, based on experience with husbandry of plants and animals, suggests that a growing mind and spirit that is continually nourished with appropriate food for thought and feeling will grow healthfully to full stature, and bear fruit abundantly.

MI arranges for students to give as much help as they get, to take responsibility for others along with themselves, and to work cooperatively and creatively with adults in the whole complex teaching/learning process, so there is good reason to believe that students will not become self-centered in developing their unique character, but rather they will balance legitimate self-interest with the welfare of others. This is the basic democratic value: every person has equal rights, and deserves equal access to an education that develops each person's individuality.

Validation from "On High"

"What is of most worth?" has been a basic philosophical question since Man began to speculate on the meaning of life. The major religions and schools of philosophy offer somewhat different answers, but they all agree that it is not earthly power or material wealth. The Old Testament prophet Micah asked rhetorically: "And what doth the Lord require of thee but to do justly, and to love mercy, and to walk humbly with thy God." (Micah 6:8) In the New Testament, Jesus answers the question by first quoting Deuteronomy 6:5: "Thou shalt love thy God with all thy heart and with all thy soul and with all thy mind." Then goes beyond that: "This is the first and great commandment. And the second is like unto it: Thou shalt love thy neighbor as thyself." (Matthew 22:37-39)

Every culture has developed a version of the Golden Rule, either negative ("What you do not want done to yourself, do not do to others." Confucius, 5th century B.C.) or positive ("We should behave to our friends as we would wish our friends to behave to us." Aristotle, 3rd century B.C.) The simplest common form: "Do as you would be done by." More complex moral codes are simply elaborations of this basic tenet.

In the last 20 years, a new type of evidence has come from persons who have clinically "died" and been brought back to life, a "near death experience" (NDE). Raymond A. Moody, Jr., began collecting such accounts while finishing his medical training. He has contacted thousands of persons whose reports of NDE consistently tell of meeting a "Being of light," a "guide" whom they describe as compassionate, loving, non-judgmental--even, some say, as definitely having a sense of humor. This Being shows them a vivid, 3-dimensional replay of their lives. "As they see life scenes in which they are learning things, the Being points out that one of the things they can take with them is knowledge. The other is love." Two central questions emerge:

How much have you loved? How much have you learned.[25]

This is not the kind of evidence that hard-nosed physical scientists and skeptical humanists take at face value. But since it corroborates the values that philosophers, poets, writers, and prophets of all religions expound--especially the centrality of love, in the broadest sense of appreciation, caring, and commitment--does it not deserve serious, respectful attention as another basis for choosing educational values?

Practitioners in peer-assistance programs have observed the lift to the spirit that both helper and helpee get from successful peer interchanges. We all enjoy using our knowledge and skills to help others; we appreciate such help when we need it. Universally, people agree that helpful personal interactions--which include

simply empathizing and sympathizing with others' joy and sorrow--are life's most meaningful experiences, treasures that "neither moth nor rust corrupt, nor thieves break through and steal." Why should not a school system take as its ultimate, central goal the nurture of abilities to achieve these most-valued human relationships? "Learn to love, and love to learn." Is there a better motto for the ideal school?

Mind and heart—learning and loving--are generally thought of as quite separate, even antagonistic activities. But in reality, they are intimately and uni-directionally bound. We want and need to know a great deal about what we love, whether sweetheart, pets, or roses. We are not easily sated with knowledge about our true loves. We are eager to learn more, to sharpen our skills, to develop keener perception and warmer appreciation.

The ultimate test of a school system might well be: Does it nurture a love of learning and the ability to love? Loving means learning; loving requires learning. Moved by duty or fear, one can learn without love or loving. But can one truly love without learning?

An ideal learning/loving curriculum must include all the areas for which we have multiple intelligences. The MI system is highly efficient in teaching the "left-brain" 3Rs, leaving ample time for "right brain" learning in the arts and in areas where intuition holds sway, and in which loving and learning more easily integrate.

The Challenge to and Responsibility of Peer Practitioners

Those with an answer to a problem have an ethical responsibility to society to offer their solution. Those in the peer helping movement have the answer to most of society's problems that are the result of human deficiencies of mind and heart. These deficiencies can be prevented by involving all learners in peer-helping programs throughout their school lives. Mutual instruction can meet this challenge.

Restructuring schools to provide mutual instruction is a much shorter and far easier quantum leap than the nations of Eastern Europe are now (1990) making from communism to democracy. Those oppressed peoples feel they must make this leap to free themselves, and to reverse the continued decline in their quality of life, spiritual as well as material.

The oppressive atmosphere of traditional schools degrades the quality of life for most pupils and teachers. A quantum school leap is necessary for freedom to learn and to teach, to enjoy the good life that an active mind and a warm heart ensure. As democracy is the preferred direction for a political leap, so is a truly democratic peer-helping system the ideal direction for an educational leap, which as mentioned earlier, is in the evolutionary direction that schools have been trying to take for centuries--toward genuine individualization and active, responsible student involvement in their own learning.

The peer-helping movement should take a lead role in making this leap, as experienced practitioners in peer tutoring and peer counseling have the expertise needed to implement the change successfully. The administrative problems are solvable. The costs are very moderate, both to make the change and sustain it.

When people see the human value of a truly personalized system of schooling, they will willingly pay the price—far less than the social and dollar costs of all the problems that our society now has, but would not have if our schools would do what they should and can do for all students, by involving them in a comprehensive mutual instruction program.

NOTES

1. Quoted in Anne Lewis (1989). Restructuring America's Schools, Arlington, VA: American Association of Schoool Administrators. P. 81.

This little handbook (250 pages) succinctly describes the theory and practice of most of the major current restructuring efforts. Although these vary in breadth and depth, the majority recognize the need for really basic changes. Toward the end of the book, after describing a program that inspired students to ask really penetrating questions and to follow their own leads to get answers, Lewis asks: "How do you create sustaining contexts for this? You've got to restructure the whole school to start letting this happen. Until you unfold the whole thing, it won't work" (p. 208).

2. Toward A State of Esteem (1990). Sacramento, CA: California State Board of Education. Available from Bureau of Publications, California State Board of Education, P.O. Box 271, Sacramento, CA 95802-2720, $4 postpaid (plus 7% sales tax for California residents.)

Gives the rationale for instituting self-esteem programs to correct these problems, and cites programs already operating.

3. Patricia H. Berne and Louis Savary (1989). Building Self-Esteem in Children. New York: Continuum. (Copyright 1981).

Warmly written accounts of counseling a wide variety of children and adolescents with commonplace learning and emotional problems. Although written from an adult counselor's experience, these techniques can be readily learned and applied by junior and senior high peer counselors. While not itself a training manual, this would serve as an excellent enrichment source, because of clear descriptions of problems and how they were handled to promote self-esteem.

4. Tina Blythe and Howard Gardner (1990). "A School for All Intelligences," Educational Leadership, 47:7, April, 33-37. (Quote on p. 33.)

Howard Gardner (1983). Frames of Mind: The Theory of Multiple Intelligences. New York: Basic Books.

Robert J. Sternberg (1988), Yale professor of psychology and education, has a similar theory, set forth in his The Triarchic Mind. New York: Viking Penguin.

Sternberg includes Gardner's more specific intelligences in three broader "facets" of intelligence: practical problem-solving ability, verbal ability, and social competence. These fall into two broad divisions: academic and "everyday" intelligence, but schools should develop both.

5. See Leslie A. Hart (1989), "The Horse Is Dead," Phi Delta Kappan, November, 237-242.

To Hart, the age-graded, lock-step classroom is a "dead horse."

According to Anne Lewis (op. cit.), David Kearns, Xerox CEO, in a book with Denis Doyle, Winning the Brain Race, calls for an ungraded school: "The traditional grade structure would be eliminated, with students progressing on the basis of mastery" (p. 106).

6. See Edward Zigler and Pamela Dennis (1988). "Child Care: A New Role for Tomorrow's Schools," Principal, September, 10-13.

"As early as 1970, the White House declared child care the number one crisis facing the American family," (p. 11), when only 30% of mothers worked outside the home; currently, 50% do so, and the percentage is increasing. When latchkey children were asked What is your worst fear?, 70% replied "Being home alone."

The authors describe new programs in 2 Missouri school districts that provide both before-and after-school care for students, and all-day care for pre-schoolers. At $23 (charge to parents) per week for before-and-after care, and $45 a week for full day care, the programs were about breaking even, after the districts and foundations supplied start-up costs.

7. See George Richmond (1989), "The Future School: Is Lowell Pointing Us Toward a Revolution in Education?" Phi Delta Kappan, November, pp. 232-236.

Describes a K-6 school that runs a bank and handles school currency; students make and market products, elect student officials who genuinely participate in school management involving students, even to holding court to try offenders.

8. For a fairly comprehensive, succinct, up-to-date review of the theory and practice of peer tutoring, see Sinclair Goodlad and Beverley Hirst (1989). Peer Tutoring: A Guide to Learning by Teaching. London: Kogan Page; New York: Nichols Publishing Co.

This is an expansion and revision of an earlier survey by Goodlad (1979), Learning by Teaching: An Introduction to Tutoring. London: Community Service Volunteers.

Sinclair Goodlad is a Senior Lecturer in the Imperial College of Science and Technology, University of London. Starting in 1975, he and his colleagues began having their college science majors tutor in secondary schools (to raise students' interest and proficiency in science). The program was soon extended to elementary schools.

The authors have thoroughly researched the available literature in the United States and Europe, and describe in some detail the most well-researched ones. Their extensive (23 page) bibliography lists about 500 references, the majority from American sources. Goodlad visited the United States in the late 1970s, contacting personally many tutoring projects and researchers.

9. Because so many children fail to learn to read well, it is commonly believed that learning to read is a very complex process that only highly-trained persons should attempt to teach. Quite the contrary. High-pressured group instruction is the major cause of most difficulties. The necessary skills are relatively easy to teach and to learn: to identify the sequence of sounds in spoken words, to understand how these sounds are represented by letters in a left-to-right sequence, how to go from speech to print--to encode, to write and spell, and then to reverse the process and read--to decode, translate print into speech. Children acquire these basic skills and grasp these essential concepts at different rates, which requires individual attention and pacing which group instruction does not and can not provide, but which MI can provide amply, in quantity and quality.

For a simplified basic phonics program, see E. M. Swengel (1974). YAK Phonics: A New Approach. San Diego, CA: YAK Corp.

This is a field-tested development of an innovative program developed for introductory reading in kindergarten and first grade. (See following note.) It also has proven effective in remedial instruction. It covers basic phonics in only 30 lessons, using a non-pressure narrative presentation of the "phonies principle" which is essential to children's understanding of the writing-reading process. Boys learn as readily as do girls; both slow and fast learners master the essentials, but at different rates.

E. M. Swengel (1969). "A Study of the Effects of Reducing Rote Memory Requirements on Phonics Learning of 5-Year-Old Children." Ph.D. dissertation, University of California at Los Angeles.

Very few researches in beginning reading pay attention to the heavy rote-memory load imposed by either method--to learn all words by sight, or to learn to identify the 44 different upper- and lower-case letters and associate their sounds as the phonics approach requires. Both methods as conventionally taught have about a 25% failure rate, due in part (if not mainly) to learners' inability to handle the rote memory load under lock-step group instruction.

This doctoral research project produced materials and a method that largely eliminates rote learning in basic phonics, giving phonics an even greater advantage over the whole-word sight-word method, for which there is no way to lighten the rote-memory load.

Most reading specialists now advocate early and direct teaching of phonics in beginning reading. Peer tutors only a few years older can effectively help beginners to master the alphabet and to begin to print and compose little stories, and to read. The YAK Phonics material is especially easy to tutor, even using older pupils with reading deficiencies.

For a succinct overview of currently recommended reading instruction, see Becoming a Nation of Readers (1985). The Report of the Commisssion on Reading, The National Academy of Education. Available from The Center for the Study of Reading, University of Illinois at Urbana-Champaign, 174 Children's Research Center, 51 Gerry Drive, Champaign, IL 61820.

"Teachers of beginning reading should present well-designed phonics instruction. . . . Phonics instruction should be kept simple . . ." (p. 118).

10. The October 1989 issue of Phi Delta Kappan devoted 11 articles to early childhood education, focusing on children at risk. One of the problems in early childhood is having competent care-takers under professional supervision. The MI program proposed would solve that problem, to the mutual benefit of the teen-peer caretakers—as well as school-age children who are also good companions and role models for pre-school tots.

11. J. McV. Hunt (1961). Intelligence and Experience. New York: Ronald Press. P. 267.

12. John B. Carroll (1963). "A Model of School Learning." Teachers College Record, v. 64, pp. 723-33.

13. J. Gilmour Sherman (Ed.) (1974). PSI: Personalized System of Instruction: 41 Germinal Papers. Menlo Park, CA: W. A. Benjamin, Inc.

Contains three of Keller's papers, plus a variety of papers on PSI's theory and practice, which are highly consonant with those of MI, stressing individualization and mastery learning.

"Perfection can not be controlled by the calendar and the clock--it demands a self-paced system. It appears to be a law of education that we can not hold both time and quality constant." (Italics his. J. G. Sherman, "The Theory Behind PSI," final paper in this collection, p. 225.)

14. Benjamin S. Bloom (1968). "Mastery Learning." UCLA-CSEIP Evaluation Comment, Vol. 1, No. 2.

An adaptation from this article is Chap. 4, "Mastery Learning" in James H. Block (Ed.) (1971) Mastery Learning: Theory and Practice. New York: Holt, Rinehart and Winston.

See also, James H. Block (Ed.) (1974). Schools, Society, and Mastery Learning. New York: Holt, Rinehart and Winston.

15. No innovation is beyond critical review. See Robert Slavin (1987). "Mastery Learning Reconsidered." Review of Educational Research, Vol. 57, No. 2, Summer, 175-213.

(The same report is available from ERIC on microfiche: ED 294 891.)

Slavin made a "best-evidence synthesis" of meta-analyses and other reviews of the effects of mastery learning on student achievement, and "found essentially no evidence to support the effectiveness of group-based mastery learning on standardized achievement measures" (p. 175). Moderate effects were found on experimenter-made measures. Note that Slavin refers only to group-based mastery learning.

Benjamin S. Bloom (1987) made a short, reasoned reply in the same issue: "A Response to Slavin's Mastery Learning Reconsidered." pp. 507-508.

Among Bloom's comments: "In longitudinal studies, where mastery learning procedures are used with the same group of students over several years of study, the standardized tests do reveal increasing levels of performance with additional years of mastery learning." (Which supports a parallel claim herein that MI would have a positive cumulative effect if consistently applied throughout students' entire school careers.) "I readily admit that the top 10% of the students in a class are likely to get less out of these procedures than the remaining 90% of the students in the same class" (p. 508). (A sad testimony to the inhibiting effects of group instruction. Why should any student be penalized by a System?)

Bloom's closing statement: "It is a crime against mankind to deprive children of successful learning when it is possible for virtually all to learn at a high level."

16. Benjamin S. Bloom (1984). "The Search for Methods of Instruction as Effective as One-to-One Tutoring," Educational Leadership, May, 4-18.

17. Herbert J. Walberg (1984). "Improving the Productivity of America's Schools," Educational Leadership, May, 19-27.

These companion back-to-back articles should be enough in themselves to restructure the school system—if they add the potential of comprehensive peer-tutoring.

18. The December 1989/January 1990 issue of Educational Leadership carried 14 enthusiastic articles on cooperative learning, featuring articles by some of its leading advocates--Spencer Kagan, Yael and Shlomo Sharan, Robert Slavin, brothers David and Roger Johnson, et al--along with testimony from classroom practitioners. Slavin claims that the research base for cooperative learning is so much broader and solider than for other innovations that CL will not be a passing fad. He concluded his guest editorial: "Finally, cooperative learning makes life more pleasant for teachers as well as for students. Students love to work together, and their enthusiasm makes teaching more fun. Long after something else is the novelty, teachers will continue to use cooperative methods because they can see the effects with their own eyes" ("Here to Stay--or Gone Tomorrow?" p. 3).

19. This is no new idea. The "un-graded" or "non-graded" school has been a perennial reform proposal. See Mortimer Smith, Richard Peck, and George Weber (1972). A Consumer's Guide to Educational Innovations. Washington, D.C: Council for Basic Education.

This little handbook sketches the main elements of 37 reform proposals current in the 1960's and early 1970's. "Non-Graded Schools" got a 2¼ page review (pp. 63-65), beginning by citing the opinion of then-California Superintendent of Schools Wilson Riles: "In education maybe we need to rediscover the wheel. People need to learn from one another, no matter how different they are." (Quote from The New York Times Magazine, May 30, 1971.) The editors then commented that "Current experiments in non-grading . . . are based . . . on allowing children to progress at their own rates in a program as individualized as possible, unencumbered by chronological grouping." In their last paragraph, they note: "Finally, one powerful impulse toward non-grading is the desire to protect children from a sense of failure." But the editors are a bit cynical about this, affirming that children will compare themselves with others regardless of not being age-grouped, and will "quickly see through 'non-labeling,' making a nonsense of the planner's utopia."

(No kiss of death is so lethal as to be labeled "utopian." Critics ask for perfection--or at least large strides toward it--but then they belittle any really fundamental proposal with the potential to achieve genuine reform.)

The allegedly non-graded programs described were simply multi-grade groupings which did not eliminate the basic structure of group-instruction, nor provide genuine individualization.

20. As noted, most peer-tutoring advocates are content to offer their programs as supplements and complements to the traditional classroom structure. But a few voices have been raised suggesting much wider use. The first and strongest were those of Alan Gartner, Mary C. Kohler, and Frank Reissman (1971). Children Teach Children: Learning by Teaching. New York: Harper and Row.

Co-author Frank Reissman (1988) re-issued the appeal in "A School Change Paradigm," Social Policy, XIX, Summer, condensed in Education Digest, May 1989, 10-12.

Diane Hedin (1986). "Students as Teachers: A Tool for Improving School Climate and Productivity." New York: Carnegie Corporation. (Prepared for the Carnegie-supported Task Force on Teaching as a Profession.)

(Hedin (1987) published a similar article under the same title in Social Policy, Winter, 42-47.)

Hedin begins by citing evidence of the power of cross-age and peer tutoring to "reduce student passivity toward learning," and to remove the isolation of subgroups by getting them all involved in a learning community. And goes on to comment: "Yet tutoring is not commonly offered as an integral component of instruction." She finishes her paper by addressing "the mystery of why an educational method of such demonstrated power is not more widely used . . ." (Introduction). She fails to solve the mystery by not identifying the real villain—the "dead horse" group-instruction system. Hedin, alas, is content to plead for an expanded tutoring program to augment the traditional system.

William Damon (1984). "Peer Education: The Untapped Potential." Journal of Applied Developmental Psychology, 5, 331-343.

"The purpose of this paper is to provide a rationale for making broader educational use of peer learning principles. . ." Damon lucidly discusses the psychological dynamics (based on empirical research) that make peer tutoring and peer collaboration (as in cooperative learning) so effective, and explains why they deserve a central place in the school structure.

Except for Reissman, these proponents (and a few others such as Leslie Hart) seem poised ready to make the quantum leap to comprehensive mutual instruction, but for some reason have not dared to jump. Tradition is powerfully restrictive.

21. Peter A. Cohen and James A. Kulik (1981). "Synthesis of Research on the Effects of Tutoring," Educational Leadership, December, 227-229.

(These authors published a more detailed report (1982). "Educational Outcomes of Peer Tutoring: A Meta-analysis of Findings," American Educational Research Journal, Spring, Vol. 19-2, 237-48.)

22. Elizabeth S. Foster (1988). "A Cognitive Developmental Approach to Training Elementary School Peer Helpers." Ed.D. dissertation. North Carolina State University, Raleigh, NC.

In this study, Foster gave three groups of middle-elementary tutors different levels of pre-training before tutoring: optimal, minimal, and no training. She measured their self-concepts before and after tutoring. The best-trained tutors made the largest gains in self-concept. The untrained tutors actually suffered a loss of positive self-concept. ("Nothing succeeds like success--and nothing fails like failure.")

23. Reports affirming the ability of variously handicapped peers to tutor effectively are fairly common in the literature. For example:

Charles A. Maher (1982). "Behavioral Effects of Using Conduct Problem Adolescents as Cross-Age Tutors," Psychology in the Schools, July, 19, 360-64.

Emotionally disturbed (ED) high school students were assigned to tutor educable mentally retarded 8- to 10-year-olds, for 30-minute periods twice weekly for 10

weeks (a typical short-term tutoring project). However, even this minimal experience raised the grades of the tutors in social science and language arts significantly more than those of comparison (control) groups (of high school ED students) who received 1-1 tutoring (from non-disabled peers) and another ED group that had small-group counseling. The ED tutors' improvements were sustained over the following 10 week (post-tutoring) period. These ED tutors reduced their rates of absenteeism and disciplinary referrals during and after their tutoring period, whereas absenteeism and referrals increased for the ED students in the other two groups.

Thomas E. Scruggs and Russell T. Osguthorpe (1986). "Tutoring Interventions within Special Education Settings: A Comparison of Cross-Age and Peer Tutoring," Psychology in the Schools, April, 187-193.

Experiments with elementary level learning-disabled (LD) and behaviorally disordered (BD) students found that both peer and cross-age tutoring programs produced academic gains in both tutors and tutees. However, only the cross-age tutors showed significant improvement in attitude. ("It is more blessed to give than to receive" apparently applies to tutoring.)

24. Charles R. Greenwood, Joseph C. Delquadri, and R. Vance Hall (1989). "Longitudinal Effects of Classwide Peer Tutoring," Journal of Educational Psychology, 81-3, 371-383.

A rare study. A low-SES group received classwide peer tutoring (CWPT) from 1st through 4th grades. This experimental CWPT group made significantly higher academic gains than did a conventionally-taught low-SES control group. The CWPT group approached closely the academic level of a conventionally-taught high-SES comparison group. The CWPT group was 86% minority (Black, Oriental, and other); the low-SES control group was 98% minority, whereas the high-SES (middle-class background) group was only 2% minority. The academic differences between the CWPT and control classes were significant at the .0001 confidence level. And although the academic scores were higher in the high-SES comparison groups than in the CWPT group, the differences were not statistically significant.

These results are especially pertinent as regards "intervention" treatment for "at risk" students, who typically are ethnic minorities from low-SES backgrounds. Comprehensive all-student tutoring would appear to be an effective, practical, and inexpensive method to upgrade their learning.

These results are even more significant in light of the facts that the CWPT classes used tutoring only in 3 subjects--reading, math, and language (mostly spelling). The class-wide peer tutoring was highly structured, resembling dyadic cooperative learning. Within a 25-30 minute class period, paired students took turns as tutor and tutee for each other, for 10 minutes in each role; 5 minutes were allotted for record keeping and reporting scores. Teachers were supposed to conduct such time-bound classes for a total of 90 minutes per day (30 minutes average per subject), but the researchers note that "CWPT implementation by the the experimental group teachers ranged from only the spelling period to all three academic periods" (p. 375).

There was no cross-age tutoring, usually necessary to bring along the slowest learners. And the "tutoring" amounted to little more than flash-card drill in spelling and math, and correcting misread words in oral reading. Yet such minimal peer assistance produced highly significant gains with at-risk students. How much more could be achieved by a full-scale, time-free, individualized mastery-learning program

using cross-age tutoring as needed? This program was rigidly bound within the classroom structure, so it provided minimal individualization. The report notes that the CWPT experimentals "spent relatively less time using workbooks and worksheets" than did the high-SES comparison group, which "also spent less time in arts and crafts, less time using media and discussion tasks, and less time in small group structure, and teachers provided them with less approval and less disapproval" (p. 379). (Comparison teachers apparently were a little more remote and personally uninvolved?) In view of the non-significant differences in academic levels between the CWPT students and their high-SES comparisons, the CWPT group achieved as much academic learning and enjoyed more enrichment within the same time frame.

The researchers note that "only partial implementation (of CWPT) was achieved. Consequently, the current results very likely underestimate the maximum products effects actually attainable with CWPT when it is fully implemented" (p. 381).

The barriers to "full implementation" were mainly the rigidity of the classroom system--time scheduling. Also, the teachers were running two types of "classroom ecology"—90 minutes (at most) of CWPT and the rest of the day in conventional teacher-led instruction. The researchers conclude their explanation of difficulties with full implementation by remarking: "It is interesting, however, that reductions in CWPT sessions were never attributed to lack of student interest or motivation. Student satisfaction with tutoring was consistently high" (p. 381).

When are reformers going to pay deserved attention to student attitudes, interests, and reactions?

25. Raymond A. Moody, Jr. (1988). The Light Beyond. New York: Bantam Books. Pp. 14-15.

Although Moody's books (his earlier ones are Life After Life and Reflections on Life After Life, 1975 and 1977, respectively) focus on the question of whether there is life beyond our earthly existence, the consistent testimonies of the thousands of persons who have had near-death experiences (NDEs) can contribute with some authority to the question of how life should be lived on earth. The "Being of light" apparently knows that these persons are to return to earth, and uses their life review to point them in the right direction. In addition to giving highly similar descriptions of their life review experience, (reports from persons of different religious faiths, with no faith, and from very young children with no clearly formed concepts of an afterlife), most persons also report that they refocus their lives on loving and learning. Even young children, after an NDE, are described as being "kinder and more patient" because of knowledge gained during their NDE (p. 66). "They are happier and more hopeful than those around them" (p. 77).

Removing or reducing the fear of death (the major aim of these books) is a valuable contribution to self-confidence and a positive outlook. However, the emphasis from an NDE that all we take with us to the Great Beyond is love and learning is an even more valuable contribution to the philosophy of education, which establishes the goals and suggests the practices of schooling to achieve them.

RECOMMENDED READING

In addition to the 40 references cited in the preceding Notes, the following sources provide further support for restructuring schools in line with the concept of mutual instruction. These sources list references which list references, ad infinitum.

Damon, William (1988). The Moral Child: Nurturing Children's Natural Moral Growth. New York: Free Press (Macmillan).

"From an early age, children are acutely aware of moral concerns," is Damon's opening sentence. He cites empiric studies of children's moral development, starting with what appears to be a "natural" (instinctive, inborn) feeling of empathy: ". . . reacting to another's feelings with an emotional response similar to the other's feelings . . . pleased by another's joy and upset by another's pain" (p. 14). Further moral sensivities—shame, guilt, a sense of justice, willingness to share--evolve further through children's social interactions and from internalizing adult moral standards. "Human nature," as seen in children's natural moral development, is primarily geared to sharing and cooperation. Mutual instruction works with, not against human nature.

Goodlad, John I. (1984). A Place Called School: Prospects for the Future. New York: McGraw-Hill.

After several years heading an intensive study of public schools (involving site visits to 1,016 classrooms, collecting data from 1,350 teachers through interviews and questionnaires, and similarly from 8,624 parents and 17,163 students), Goodlad begins Chapter 1:

"American schools are in trouble. In fact, the problems of schooling are of such crippling proportions that many schools may not survive. It is possible our entire public education system is nearing collapse" (p. 1).

Goodlad, no ivory-tower observer, began his teaching career in a one-room country school, and subsequently taught at every grade level through advanced graduate work, ending as Dean of the Graduate School of Education, UCLA, until 1983. He currently heads the Center for Educational Renewal, located in the College of Education at the Univesity of Washington, Seattle.

In spite of his pessimistic opening, Goodlad sees hope through fundamental restructuring, which he spells out in Chapters 9 and 10. Recommendations: start students at age 4 and issue their "certificate of completion" at age 16. Admit students on their 4th birthday (not enmasse on a September date). No age-graded classrooms, no ABCDF grading. Goodlad recommends 3 multi-age, non-graded groupings (4-7, 8-11, 12-15), with the first 2 age groups on the same campus. (Why not all 3?) Emphasis on individualized instruction.

How might this be accomplished, when teachers are still very much central to these groupings? Goodlad recommends confidently:

"Consequently, peer-group teaching is a dominant characteristic . . . The older students help the younger-- . . . providing an excellent opportunity for teachers to use the best role models for assisting younger children. Students teach each other" (p. 339).

Although the MI concept goes somewhat beyond Goodlad's vision of the ideal school, MI contains all his recommendations, and would achieve them more easily and naturally than in his formulation. He does not make clear why the last 4 years (12 through 15) should be physically separated from the early years. There is no sociological, psychological, pedagogical, or humane reason to separate these young teens at the time when they need continuing close human connections with where they have been and where they are going in their own development. And younger children need the help these maturing young adults can give, to their mutual benefit.

Kirschenbaum, Howard, Rodney Napier, and Sidney B. Simon (1971). Wad-Ja-Get? The Grading Game in American Education. New York: Hart.

A narrative, semi-fictional account (based on actual cases) of a high school's struggle to devise an equitable "educationally useful" system of evaluation. Solidly factual and scholarly, its 40 page Appendix A annotates 89 references, and a 15-page Appendix B describes 8 alternative evaluation systems. This handbook is as valuable today as when published, as it deals with a perennial problem as yet unsolved (and getting worse, if anything) in conventional schooling. (Unsolved problems have a way of getting worse.)

Kohn, Alfie (1986). No Contest: The Case Against Competition. Boston: Houghton Mifflin.

A recent and even more scholarly condemnation of competitive grading, and of competition in general.

Marshall, James (1985). The Devil in the Classroom: Hostility in American Education. New York: Schocken.

Marshall, a lawyer and political theorist, served 17 years on New York's Board of Education (4 years as president). He brings an "outsider's" view to support the "insider's" (such as Goodlad's preceding), but is even more severe in criticizing the schools:

"What is generally overlooked is that a pervasive element in our schools (and American schools are not unique in this) is their autocratic, undemocratic nature, from classroom to top administration. Autocracy may arouse hostility or subservience. The one is disruptive, the other deadening. Both tend to block the realization of capacities to learn and to teach, to inquire and create" (p. 11).

Marshall reviews Kurt Lewin's classic 1939 study of children's behavior under 3 kinds of adult leadership: autocratic, democratic, and laissez-faire (Kurt Lewin, R. Lippitt, and R. K. White. "Patterns of Aggressive Behavior in Experimentally Created 'Social Climates.'" Journal of Social Psychology 10 (1939): 271-299).

Both the autocratic and laissez-faire ("permissive," adult present but gave no control or guidance) situations produced a great deal more hostile behavior than did the democratic, in which children and leader together agreed on what to do and how to do it. The democratic situation produced almost no hostility.

Mutual instruction maximizes this democratic relationship between adults and students, and between older and younger schoolmates as well as between same-age peers.

Strain, Phillip S. (Ed.) (1981). The Utilization of Classroom Peers as Behavior Change Agents. New York and London: Plenum Press.

A collection of research articles, aimed primarily at the need to mainstream handicapped students in response to the Federal Education for All Handicapped Children Act. In response to "Public Law 94-142 and its accompanying demand for individualized instruction, peer-mediated interventions seem likely to proliferate . . . (C)lose adherence to the principle of individualized programming has rendered obsolete the 'adults only' model of classroom instruction" (p. ix).

With that tribute to peer "mediation" one might expect the editor to move it front and center. But no. Whether peer assistance is accepted

". . . as a positive adjunct to daily classroom practice" depends on "communicating the findings of applied research."

(I italicized adjunct, as another example of "believers of little faith" relegating peer assistance to a limited auxiliary role.

This book is a valuable resource, however, in spite of its limited concept.

Swengel, Edwin M. (In press). "Cutting Education's Gordian Knot," Phi Delta Kappan, Vol. 72, 1990-1991.

A shorter presentation of the concept of comprehensive mutual instruction.

Topping, Keith (1988). The Peer Tutoring Handbook: Promoting Cooperative Learning. Cambridge, MA: Brookline Books.

This is an excellent companion book to the Goodlad and Hirst volume on peer tutoring (see Note 8, p. 18 preceding). Topping has had unusual success with Paired Reading, an in-class tutoring technique. See his "Peer Tutoring and Paired Reading: Combining Two Powerful Techniques." The Reading Teacher 42:7, March 1989, 488-494.

Wang, Margaret C. and Herbert J. Walberg (Eds.) (1985). Adapting Instruction to Individual Differences. Berkeley, CA: McCutchan.

Contributions from 23 university-based researchers. Part Two describes 4 major programs: cooperative learning (2 types), computer-assisted instruction, 2 school improvement programs, plus a friendly critique of Bloom's mastery learning programs.

The critiques of the programs are as valuable as their descriptions. David C. Berliner is incisively critical in finding that none of the programs fit his concept of "adaptive," which is to fit instruction to the widely varying aptitudes and learning styles of students. He finds that adaptation is still mostly limited to pacing—giving students more time if needed to accomplish a task, without giving individualized instruction. He charges that these programs generally require the learners to adapt to a limited range of modes of instruction, rather than adapting instruction to each learner's unique needs. (David C. Berliner. "How Is Adaptive Education Like Water in Arizona?" Chap. 14, Comments on Part Two, pp. 298-312.)

His answer: "Because it is very hard to find, and when you do find it, it seems to evaporate right in front of your eyes" (p. 312).

Mutual instruction should be no such mirage. It has great flexibility, and by freeing teachers from classroom management and group teaching, allows them to design and implement genuinely individualized instructional programs, using mutually beneficial peer assistance to provide the 1-1 instructional help that is essential in adaptive instruction.

Special Humorous Mention

Reading about the grave crises in American education and plowing through (often dreary) reform proposals can be a pretty grim, depressing occupation. To guarantee sanity, readers are urged to equip themselves with the following:

Recess Time: The Best Cartoons from the KAPPAN, and Scholarship: More Great Cartoons from the KAPPAN. Bloomington, IN: KAPPAN (Phi Delta Kappan).

(How do cartoonists get such devastating insights into our professional lives?)

Educational Journals

There are over 2000 educational journals, most of them specializing in certain areas. The following are three of the more general, addressed to all levels of professional educators and to interested members of the general public.

Interested readers can keep abreast of major developments in education, with lively pro and con discussion, through any one of these 3 journals. They are all improvement-oriented and reform-minded.

Educational Leadership. Journal of the Association for Supervision and Curriculum Development (ASCD).

Starting its 48th volume/year (1990-91). Most issues have a majority of articles devoted to a single theme. Restructuring in some form shows up perenially, most recently in the 1990 issues of April (Vol. 47:7)--"Restructuring: What is it?"--and May (Vol. 47:8): "Creating a Culture for Change". The December 1989/January 1990 issue (Vol. 47:4) featured 14 articles on Cooperative Learning. About half of all articles are by university personnel; most list extensive references in notes or bibliographies.

Phi Delta Kappan (KAPPAN). Journal of the international educational fraternity, Phi Delta Kappa.

Starting its 72nd volume/year (1990-91). About 50% of articles from university personnel. Publishes more research articles than Educational Leadership, but has fewer "theme" issues. Plus the incomparable Kappan cartoons--a dozen or more per issue--from their stable of 30 contributors. (E.g., college graduate to doting parents: "I still want to be a fireman." by W. A. Vanselow, May 1990, p. 796.)

Teacher. Published by Editorial Projects in Education, Inc., a foundation-supported organization that also publishes Education Week.

Teacher is a newcomer in the field of general education, just finishing Volume 1, its first year of publication (1989-90). Like the above two journals of broad appeal to educators, Teacher covers developments that concern and may affect most persons in education, but aims a little more directly at classroom teachers at the pre-college level, (without offering much What-to-do-Monday recipe material). Teacher articles to date have not listed references.

Research Resources

ERIC (Educational Resources Information Center) annually collects scores of thousands of articles on every conceivable aspect of education. Researchers looking for comprehensive information on peer assistance programs will find much more in ERIC than in professional journals and books. The main "descriptors" that will yield information on peer programs are: Tutors, Tutoring, Tutorial Programs, Cross-Age Teaching, Cooperative Learning, and Non-Traditional Education (for alternative types of schooling).

Documents accepted by ERIC (available on microfiche and in hard copy) are listed in the monthly RIE (Resources in Education), which prints the abstract of each document. An annual volume compiles the entire year's collection.

Current Index to Journals in Education (CIJE) lists monthly the journal articles published in most educational publications. Peer program information is listed under the same headings (descriptors) as for ERIC. Annual compilations include a full year's publications.

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"He who teaches is twice taught."

A Proposal for
A MUTUAL INSTRUCTION SYSTEM OF EDUCATION

by E. M. Swengel, Ph.D.
Education Consultant

The School's Dual Role: To Develop Personal Individuality and Social Responsibility

From early childhood, every person tries to find meaning and purpose in life, and to discover how to fit into and contribute to society. Schools thus have a dual responsibility: to maintain society by teaching all students a common body of knowledge and ethics, but also to develop each student as an individual.

To meet these equally legitimate but somewhat conflicting demands, schooling must be flexibly organized. Schools must break the lock-step system of age-graded classes and large-group instruction. Students cannot be educated to act responsibly if they are treated as undifferentiated raw material to be mass-produced into uniform finished products on a factory assembly line. Every child deserves to be educated as a unique person, willing and able to contribute to the common good.

The Mutual Instruction (MI) school herein proposed will nurture individuality along with social responsibility. Students will simultaneously develop enlightened self-interest and understanding of their inescapable global interdependence. By developing a personal-social value system, students will become morally, intellectually, and psychologically incapable of intentionally harming others, and will not suffer themselves to be exploited. Strong-minded, warm-hearted adults will maintain a cohesive society, and will manage technological and social change and growth to benefit all people.

The appended floor-plan is of a circular building (symbolic of the world) to accommodate 1000 to 1200 students, ages 5 through 18. (Other architectural designs are appropriate. Existing facilities can be adapted economically to serve the MI concept.) The staff of certified teachers are aided by trained paraprofessionals, at a teacher-pupil ratio not over 1 to 25, and an adult-pupil ratio of not over 1 to 15. The staff will include a psychologist, nurse, and at least two teachers trained in special education, as the school will enroll and mainstream exceptional students with physical, mental, and emotional handicaps.

The entire teaching and administrative staff will be about equally divided between male and female, and contain ethnic minorities approximating percentages in the local or national population.

The school will provide child-care before and after class hours, for children of working parents. Trained paraprofessionals will supervise activities, and coordinate them with students' formal educational and developmental programs.

A pre-school unit will operate in a separate unit adjoining the main building. It will accommodate children from ages 6 months to 5 years.

Because the pre-school years are critical in children's development, society must decide if the public school should be responsible for all child nurture outside the home. The MI comprehensive concept recommends consistency and continuity, cradle to grave. Teen-agers will be required, with instruction and under supervision, to work and play with pre-school children, to prepare them for parenting, and to round out their understanding of what human life is and the nurturing it requires. Therefore, the pre-school unit should be on the K-12 campus.

Ten Essential, Distinctive Features of a Comprehensive Mutual Instruction System

None of the following features is new. Most have been successfully and extensively practiced under varying school conditions. But they have not been combined in the unique way herein proposed, as an integrated, coherent system to educate the whole person by truly individualized methods.

I. All students help others learn subject matter, skills, and proper behavior.

This is the unique organizing principle of this school. Beginning in the 1960's, tens of thousands of peer- and cross-age tutoring projects, in America and throughout the world, have demonstrated beyond question that when students help each other, both tutor and tutee improve their grasp of subject matter, their communication skills, and their interpersonal relations. However, this rich source of individualized learning and behavior control has never been fully tapped, as most tutoring projects are limited to a few pupils and a few subjects, notably reading and math.

All students will be taught how to give and receive individual help, and to work cooperatively in small groups. Teachers will give careful attention to pairing students and forming cooperative study groups that will be most helpful in learning subject matter, proper behavior, and to appreciate and care for others.

This teaching-learning experience is so valuable, both academically and socially, that every student should experience tutoring daily, both as tutor and tutee. Because helping other students benefits tutors, in head and heart, as much as it benefits tutees, requiring students to assist others does not exploit them or waste their time. Rather, it gives them invaluable first-hand experience in using their knowledge and skills in learning to communicate—and to care.

II. Students from 5 to 18 years of age use the same facilities, are taught by the same teachers, and work and play together.

Because school life increasingly dominates children's and youths' growing years, the school itself must become a model society. Young children should not be cut off from creative contacts with teenagers; teenagers should work and play with youngsters and infants, if for no other reason than to prepare for parenthood. A school population of 600 to 1000 will include a wide variety of students with special talents, interests, and personalities who will serve as role models for younger children. A large professional staff of teachers and aides also provide role models, especially for older teenagers.

Studies of motivation have found that a competent peer or older child is more often selected as a role model by another child than is an adult. By developing the unique abilities of every student, the school will provide a rich variety of suitable role models. Successful students apply gentle and benign pressure on fellow schoolmates to do their best.

III. Elementary students need the same learning facilities as secondary students.

A school dedicated to actualizing potential should provide stimulating environments for students of all ages. Children's special abilities and talents are most likely to be revealed through creative contacts with advanced students. The departmental rooms devoted to individual disciplines provide an additional powerful stimulus. A chemistry lab looks and smells different than a physics or biology lab; an arts and crafts room has a different aura than a library or music room. Students of all ages need to breathe the special air of each discipline, and sense the enthusiasm of students, teachers, and aides who become intensely interested in a subject.

IV. Students work at their own pace through developmental programs, not through year-long grade levels and time-limited courses.

This is not a free-choice, "do only what you please" school. Students will learn the basic State-mandated curriculum and the enrichment programs the school offers. However, students and their parents will have some choice in the mixture of subjects, emphasis put on each, and level of achievement desired (in subjects in which 100% mastery is not essential). Students continue to work on requirements until they are satisfactorily met at an agreed-upon level of proficiency. Thus, no child will fail a grade or fail a subject. Neither will a child feel inferior to other children, if parents as well as students accept the fact that individuals naturally learn at different rates, and that "slower" does not mean "dumber."

V. MI teachers have three loves: their subject, students of all ages, and teaching students to teach each other.

Dedicated teachers, by nature and profession, already meet the first two criteria. They can readily learn techniques to meet the third: to teach students to give and receive help.

Although teacher personalities differ, management of all MI classrooms will be consistent: optimum use of 1-1 peer assistance and small-group cooperation.

Teachers will devote almost their entire time and effort to teaching, mostly in small groups and individually, in planning individual programs, discussing learning problems and progress with students, aides, and tutors, and conferring with parents. All teachers will have school time for planning lessons, checking papers, and preparing reports. They will not be expected nor required to take work home.

The two teachers in each departmental room will select, adapt, or create developmental programs that progress from kindergarten through 12th grade. Students from all grades will do some work, at least once a week, in the single-subject classrooms. Departmental teachers will help elementary teachers present their subject matter in the self-contained K-6 classrooms. All teachers will know and work with all students, who will understand that the entire staff are their teachers, and the whole student body their classmates. Accessibility of everyone to everyone enriches the teaching-learning experience for students and staff alike.

All classrooms will have computers for computer-assisted instruction (CAI) wherever it is appropriate. At least one teacher will be a computer education specialist, to assist other teachers in using computers productively.

Teachers will not regularly assign homework. However, most students will become interested enough to pursue some subjects on their own time outside of school.

All school personnel will understand and be dedicated to two basic principles: (1) students are to learn to take major responsibility for their own studies; and (2) students are to accept responsibility to help others and to receive help from schoolmates: "Independence through interdependence."

VI. The "magnet school" concept applies in all subject areas.

All departments will operate on the "magnet" principle, offering specialized instruction to students who wish to go beyond standard curriculum requirements. Parents can participate in planning individualized study programs for their children.

By teaching at the growing edge of their minds, not pushing students too fast nor holding them back, the MI system makes learning so efficient that students will have time and energy to devote to their special interests and activities. Teachers will help plan and supervise individualized study programs.

Students often catch fire from sparks of schoolmates' enthusiasms. As they develop interest in and enthusiasm for a subject, students themselves become personal magnets that draw their friends into their activities. Pursuing their own special interests builds students' self-confidence and self-esteem, and develops internal motivation, reinforced by support and encouragement from schoolmates and staff.

VII. Student evaluation is on a competency basis, not ABCD normative grading.

Parents and students will understand that learning is developmental, not competitive. Pupils work at their own pace through developmental programs, working at each stage until they reach the level of competence needed for an advanced level. In a competency-based system, the only meaningful evaluation is to determine how far a student has gone. If a student has a learning problem, this will be reported descriptively, not reduced to a letter or number grade. Special programs will be designed to help students with learning problems, short- and long-term.

If a student leaves the school, his/her developmental record can be translated into a grade equivalent for proper placement in a graded school. Teachers will assign qualitative ABCD grades only when demanded by another school; letter grades will not be in students' records in an MI school. MI school records describe specific achievements.

VIII. The recommended MI curriculum emphasizes creative activities, esthetics, and physical development, and provides generous time for them.

Students will be urged to invest much more time and energy on arts and crafts, music, drama, and physical activities than is allotted in traditional academically-oriented programs. Students will learn team sports by being grouped into balanced teams, instructed in the basic skills required, and given time to play a full game--not 20 minutes with too many players of widely-differing skills.

The gym and play areas will be used all day long. There will be no mass recesses, but every student will regularly take activity breaks that are genuinely re-creative and physically educative. (Teachers too will take breaks.)

This same concept will apply in all areas: children in well-matched small groups (not over 5-6 per group) will be given enough uninterrupted time to complete a task or project at a satisfying level of accomplishment.

Whenever students become intensely interested in a subject or activity, their individual schedules may be altered to allow time to delve deeply into it. When they reach a plateau of learning and interest in an activity, students resume work in subjects they temporarily back-burnered.

"Physical development" includes intensive study of the human body—its functions and essential care to achieve and maintain physical and mental health. Students will learn to respect and value their bodies and minds so they will not abuse them with drugs, alcohol, tobacco, over-eating, junk food, lack of sleep, and insufficient exercise. In a cooperative learning environment that stresses sharing, caring, and equal give-and-take, concern for protecting and promoting one's own health will readily extend, at the minimum, to not abusing others, physically or psychologically.

IX. Parents will be invited to cooperate actively in the school's programs.

Parents—and any members of the community—with knowledge, experience, and expertise in areas related to the curriculum, will be welcome to make presentations, and to help plan and monitor learning programs for interested students.

When parents participate in planning their children's programs, they must understand and agree that when children spend more time in areas of special interest, they may make slower progress in other areas. The school will protect students from over-load, and resist parents' demands that their children "do everything" and always perform at the highest proficiency levels. Teachers, parents, and students will cooperate in setting reasonable goals and standards which students can comfortably meet. School should be a challenge, but not a heavy burden. Although learning is serious business, the MI program will make it enjoyable through cooperative planning.

The teaching staff will sponsor open meetings with parent groups to discuss matters of general interest. Individual parent-teacher-child conferences will be held at least 3 times a year; more frequently if problems arise.

X. Flexible scheduling in a year-round program fits personal vacation plans and personal growth needs.

The school will operate continuously year-round (not on the 9 weeks on/3 weeks off schedule common to year-round schools), with standard 2-week Christmas and 1-week spring vacations. Teachers and paraprofessional aides will be employed on a 12-month basis, with a one-month paid vacation which they can take whenever they wish and in whatever time segments they choose. Teachers who want a longer vacation—the common "summer off"—can be accommodated.

Because they work at their own pace on developmental programs, students can take vacations when desired without jeopardizing their status. When they return, they "pick up where they left off." (But "skipping school" randomly is not acceptable; only parent-approved and planned vacations are condoned.)

Students will attend for the State-mandated number of days of instruction in a school year (commonly 180-185 days). However, these days may be used any time during a calendar year. Students desiring more time, either to make up deficiencies or to forge ahead, can be accommodated.

"Flexible scheduling" connotes more than merely adjusting to vacation plans. It implies a system responsive to the changing requirements of students and staff for more time to devote to special needs and interests.

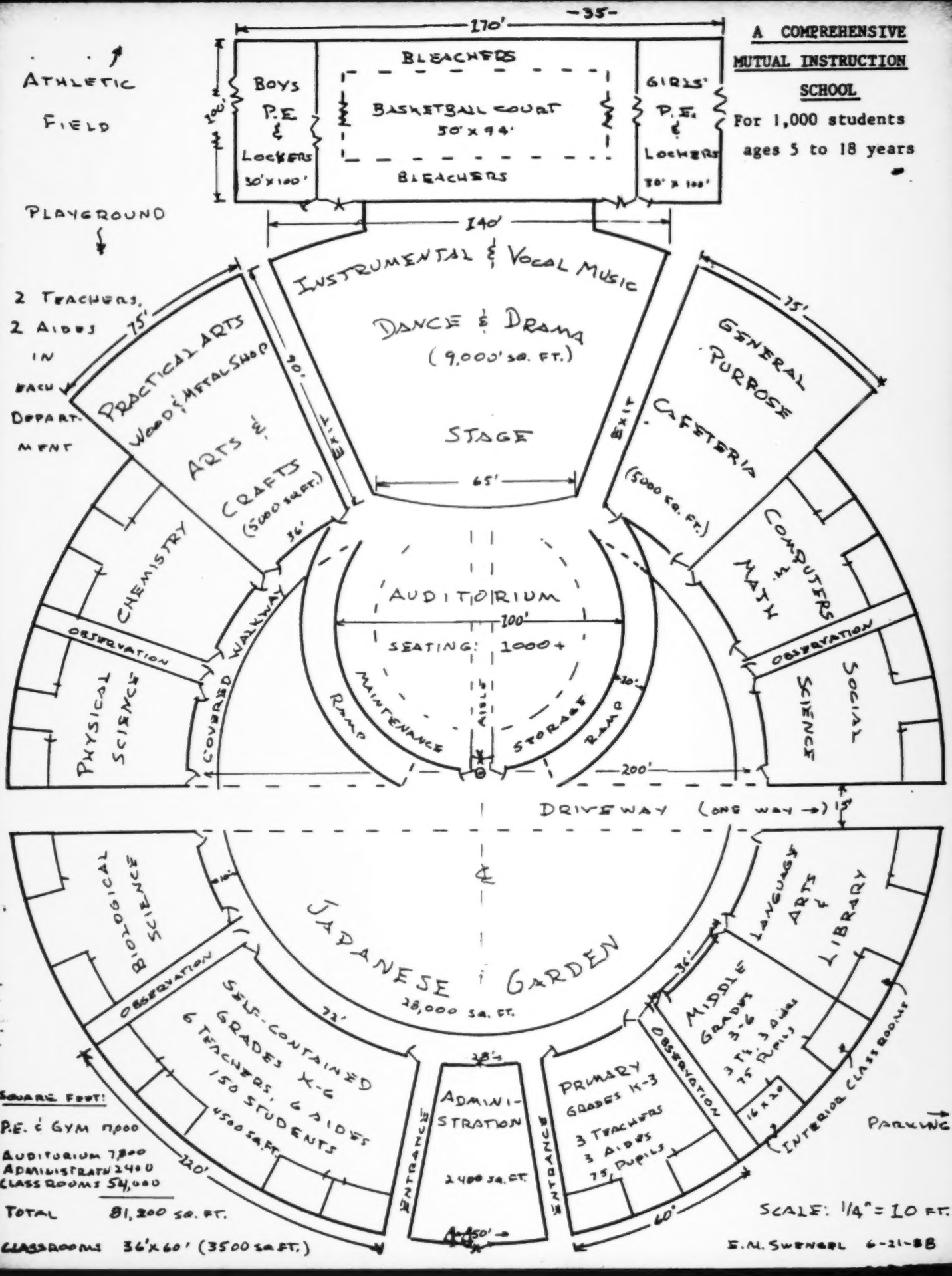
The primary aim of MI is to provide resources to meet individual needs, not to chop or stretch them to fit a Procrustean bed of rigidly-set time limits for courses, projects, and exams. Students will learn to establish and meet reasonable time demands, to avoid procrastinating, and to be dependably punctual at scheduled meetings. These behavioral objectives will be achieved within the broader objective of tailoring time and responsibilities individually to long-term objectives and to differing temperaments and learning styles.

Flexibility does not imply lack of structure and system. It means sensitive, individualized planning to achieve optimum learning, student by student, not group by group.

E. M. Swengel, Ph.D., Education Consultant
4875 San Joaquin Drive, San Diego, CA 92109-2318 (619) 272-1935 September, 1988

A COMPREHENSIVE MUTUAL INSTRUCTION SCHOOL

For 1,000 students ages 5 to 18 years



SQUARE FOOT:

P.E. & GYM 17,000

AUDITORIUM 7,800
ADMINISTRATN 2400
CLASSROOMS 54,000

TOTAL 81,200 SQ. FT.

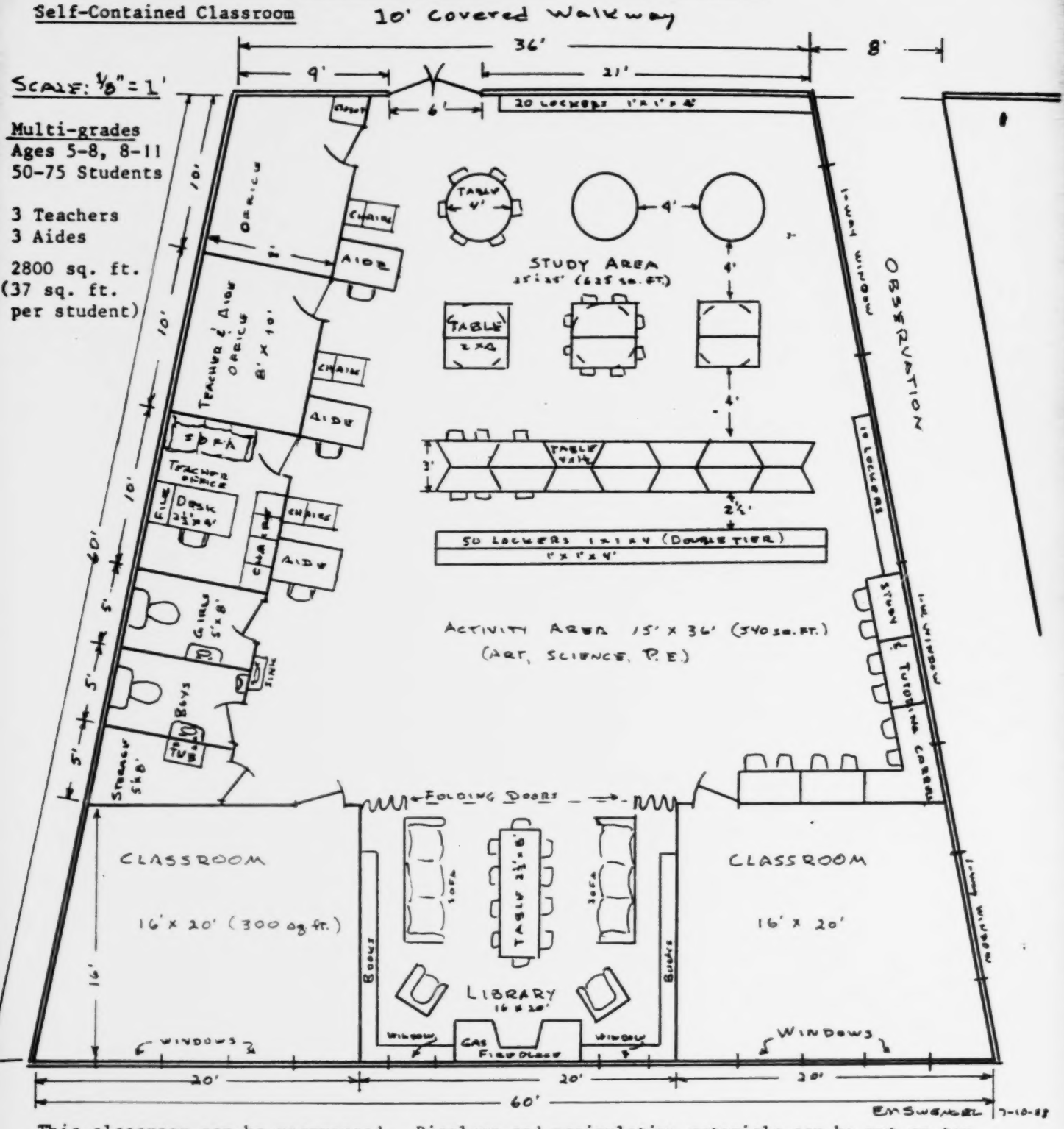
CLASSROOMS 36'x60' (3500 SQ. FT.)

SCALE: 1/4" = 10 FT.

E.M. SWENSEL 6-21-88

A COMPREHENSIVE MUTUAL INSTRUCTION SCHOOL

Self-Contained Classroom



Multi-grades
Ages 5-8, 8-11
50-75 Students

3 Teachers
3 Aides

2800 sq. ft.
(37 sq. ft.
per student)

This classroom can be rearranged. Displays and manipulative materials can be put on top the 25' tier of lockers, to make it serve as a room divider.

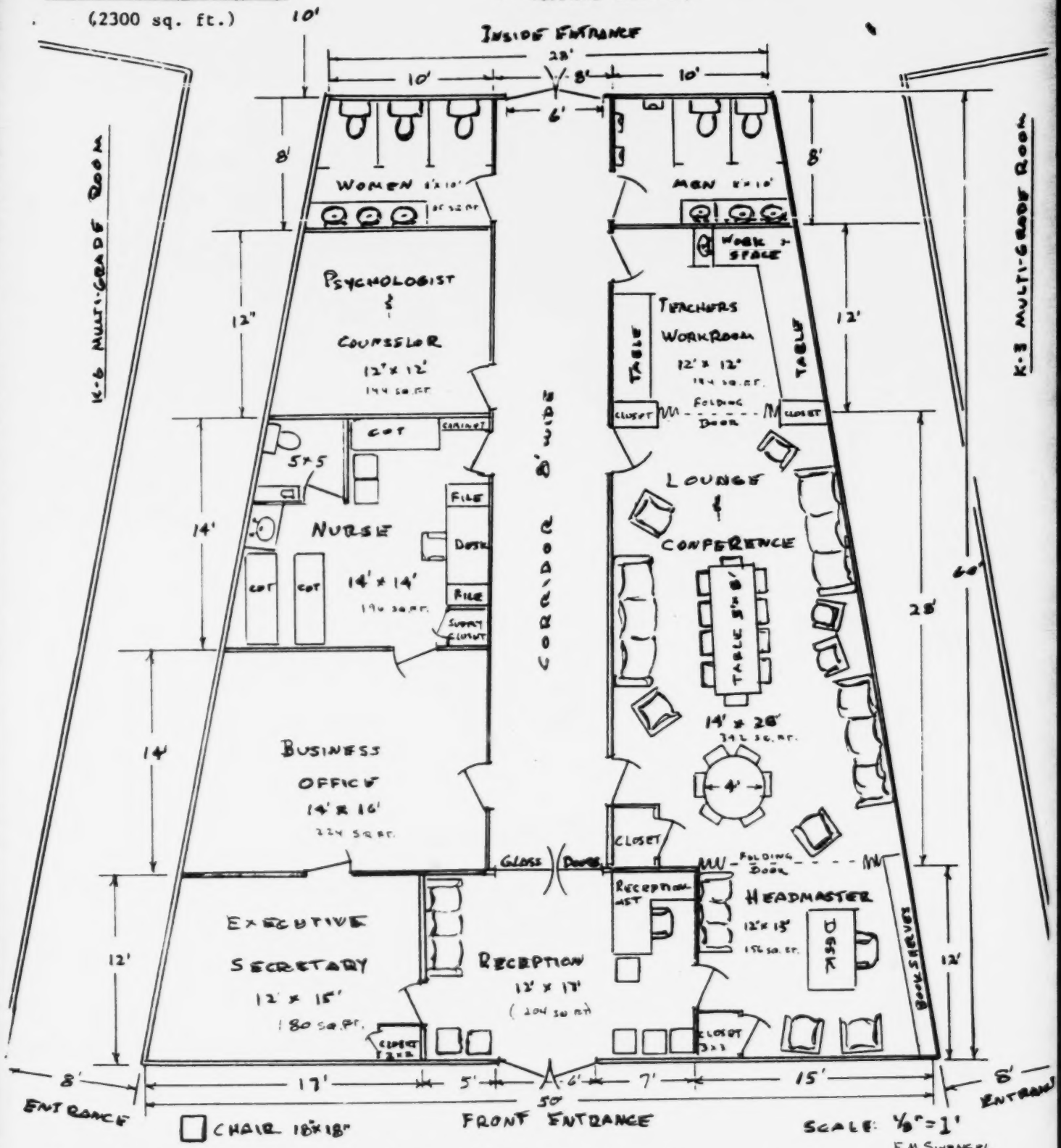
Each teacher/aide office accommodates 6-7 students for conferences and instruction. Each office has a private phone line and answering machine, and a computer terminal.

The Aide Station nearest the door has a separate room phone (light only, no bell), and will always be attended, by Aide or responsible student.

The two 16 x 20 classrooms can be devoted to special uses, permanently or temporarily.

Administrative Building

(2300 sq. ft.)



E.M. Swengel
7-13-88

This school is designed to require a minimum of adminstrative support. The Business Office can accommodate 4 additional secretarial/clerical personnel, one of whom will keep medical records, and assist the Nurse as required.

The Conference/Lounge area can accommodate 80 or more persons with folding doors opened.

The Executive Secretary's office can be arranged to suit, but similar to the Headmaster's.

Supplementary Explanatory Notes on Mutual Instruction in Action

1. The Self-Contained Classrooms for Students Ages 5-11 Years (See school plan)

Although the MI concept eliminates age-graded classes (1st grade for 6 year olds, 2nd for 7's, etc.), most young children need a homeroom and a few full-time teachers for most of their instruction and supervision. Thus, the proposed MI plan provides for two types of multi-age home rooms for this 5 to 11-year-old age group.

One type splits this age group into two units of 60-75 students each, with 3 teachers and 3 aides in each room. The primary room (right of Administration) is for beginners (kindergarten level) through 8-year-olds (3rd grade). The adjoining intermediate room is for 8- through 11-year-olds (6th grade). The overlap of 8-year-olds in the two rooms accommodates pupils more or less ready for advanced work. These narrower age-range rooms are for children who need limited social contacts. They will have contacts with older students when they go to the departmental rooms for instruction, and when older tutors work in their rooms.

The larger multi-age room (left of Administration) enrolls 125-150 students, ages 5 through 11, who are socially and intellectually able to relate well to the larger number of teachers and aides and to the wider age span of room-mates. These students will feel confident in spending more time in independent and cooperative work in the departmental rooms. Students in this K-6 room will be effective peer-helpers for same-age pupils in the two smaller self-contained rooms.

2. The Departmental Rooms and Teachers

These serve all students 12 years of age (7th grade) and on, and also especially interested and capable younger students. Work in the departmental rooms will be mostly on independent and small-group basis. Students will not sign up for the usual quarter or semester courses, but will enter a discipline at an appropriate level when they are well-prepared to succeed. They proceed at their own pace through a developmental program geared to their abilities and learning styles, until they meet course requirements or achieve their own goals beyond those. Departmental teachers will help students with similar abilities and interests form efficient study groups, pair them with proficient tutors, and help them maintain interest and make steady progress.

Teachers will integrate their disciplines so that students will understand the inter-relationship of all fields of knowledge. Study in each field will enrich what is learned in other fields, and will often spur interest in a new subject.

3. Teachers as Professionals; Aides as Paraprofessionals

Optimum learning is highly individualistic. Teachers, as "learning facilitators," can best serve students on an individual basis. Therefore, MI gives each teacher a small private office for individual and small-group instruction and conferencing. Teachers observe students at work, evaluate their work, assess their special intellectual and social skills, and plan individualized programs to develop their strengths.

What appear to be a student's weakness or deficiency may be only a developmental lag, which will disappear with growth and strengthening of innate abilities. Only when serious developmental deficiencies persist will the staff plan a program directed specifically at remediation. Centering children's attention on their weaknesses is as likely to perpetuate as to correct them.

A teacher's time will be about equally divided between group instruction and individual and small-group conferencing. Uninterrupted conferences will last long enough for teacher and student(s) to understand clearly what is to be done, how, when, and at what level of competence.

Aides will handle most of the non-teaching, clerical duties: record attendance, handle lunch money, hand out study materials and take-home notes, track students

who leave the room, supervise orderly room maintenance and clean-up, enforce basic discipline and intervene in squabbles. However, in a well-managed MI room, aides will be involved mostly in instructional support, reinforcing good work and proper behavior, and helping students when no competent tutors are available.

Because children are similar, and profit from working together, teachers will form compatible groups and give group instruction when it is efficient. However, teachers will emphasize that students first work independently and then share results--check answers, read an original essay or story, discuss reactions, compare judgments.

Tutoring leads students to feel individually responsible both to have correct information and to communicate it clearly. That is why all students benefit from learning to tutor. The same thinking and communication skills that tutors need are also needed when one is a tutee--to ask questions clearly and pursue a line of questioning until a difficulty is cleared up. Students trained to tutor do not become dependent learners.

4. The School Psychologist and the School Nurse

The school psychologist will take main responsibility for working with students who have continuing behavioral problems. The psychologist will plan a special school program to handle problems, in cooperation with parents, room teachers, departmental teachers, Family Teacher, school nurse, aides, mature older students who work with the child, and the child's own doctor(s).

The psychologist and nurse will do some teaching, usually by giving group presentations of supplemental information in programs dealing with physical development and health.

5. The "Family" Program

Because of the large school population, students may feel lost and alienated unless they belong to a closely-knit support group. Thus, every teacher and a compatible aide (a male-female team) will be assigned a "family" of not over 25 students including the entire school-age range, with approximately equal numbers from each age group.

The "Family Teacher" will plan each member student's overall program, in consultation with parents, the student, and other teachers. In this role, the Family Teacher is counselor, a role which rightfully belongs to teachers.

All family members except the youngest and oldest are simultaneously Big and Little Brother/Sister to other family members. Every member is expected to help and be helped, to become interested in all others, to know how they are getting along in and out of school. The Family will be a support network, not a spy ring. Staff and students will be instructed as to the kinds of information that must be kept confidential among family members, and what must be reported.

The Family will meet daily for a half hour or more, mainly to keep in touch with each other. Developing positive family relationships becomes in effect a course in human relations, learned through living.

6. Reporting Student Progress

Students will keep a daily record of their activities and enter them into a computer program which will compile a monthly report. The Family Teacher will go over this summary report with each student individually during a half-hour conference before the report is sent to the parents.

The report will list the student's activities (hours spent in each area, e.g.) and specific achievements, which will be rated Satisfactory or Unsatisfactory. If the latter, explanation is given in writing, and can be followed by phone or face-to-face conferences. Because the Family Teacher meets regularly with all members and gets current reports from other teachers, aides, and tutors, a student's difficulties will be identified early, and dealt with before becoming serious.

7. Students Maintain Their School Environment

Developing students' understanding and appreciation of, pride in, and responsibility for all environments, public and private, is a high MI priority.

In the storage room in each classroom is a heavy-duty vacuum cleaner, mops, and all materials needed to keep the room clean. The maintenance staff are regarded as teachers; they will teach all students how to clean and maintain their rooms and the outside environment, and will supervise student maintenance crews. Students will learn to take pride in maintaining their public facility by regularly serving on maintenance teams, where they will learn the mechanics of plumbing, wiring, air conditioning, food preparation and service, and landscape care.

8. Restrooms in the Classrooms (See classroom floor plan)

Communal restrooms are the source and site of much undesirable behavior. With toilets in the classroom, taking care of biological functions will be a natural, incidental activity, avoiding abuses of "bathroom privilege" common with group toileting.

9. The Interior Classrooms (16' x 20') (See classroom floor plan)

These interior classrooms provide instructional flexibility. They are for group instruction and special activities. In the self-contained classrooms with young children, a section may be screened off for napping. The rooms will be used for audio-visual presentations, committee meetings, for noisy or distracting activities (rehearsing a playlet, e.g.)--for any activity that needs to be separated from the independent and small-group work in the main classroom area.

With 2 or 3 teachers and aides in each classroom, a teacher or aide can work in each interior room while another teacher and aide supervise activities in the large areas.

10. The Library with a Fireplace (See classroom floor plan)

Many children of working parents may spend their whole day from 7 A.M. to 6 P.M. at school. They have no relaxed home life; the school can and should provide a homey area. A gas log fireplace with easy chairs and sofa, library table, book-lined walls, and other homelike touches make a truly "home room." It can be curtained off by folding doors to provide a special atmosphere for reading, writing, hearing stories read, and for quiet conversation before school, during lunch, and after school. Children need a variety of indoor environments at school, and this provides a highly desirable one.

11. The Auditorium, to Seat the Entire Student Body and Staff

An auditorium that comfortably seats everyone, designed for high quality stage presentations and acoustically engineered for concerts and plays, is critically important. It provides common experiences for students and staff, contributing to the needed sense of community.

At least once a week, the whole school will gather for entertainment or instruction, enjoyable by and meaningful to all—concerts, plays, presentations by adults from the community, recognition of special achievements of students and staff members, community sing, and programs the students present.

School is the dominant community for most students. They spend the majority of their quality waking hours in school, for 13 of their most formative years, 5 through 18. They need to develop a sense of belonging at all levels—to 1-1 tutoring pairs, to members of cooperative small-group projects, to their home room mates, to their school Family, and finally to the whole school, a microcosm of the larger community they will enter as young adults. Experiences shared together develops the feeling of belonging and contributing to the whole community, whose members recognize and value each member as a unique person.

9-85

(NOTE: This semi-narrative description of Mutual Instruction (MI) was written about 1960. Except for some light cosmetic re-touching and trimming over the years, it appears below basically in its original form and content. It has been circulated to hundreds of high school and university students, teachers-in-training, elementary and secondary teachers seeking advanced degrees, and parents. They have consistently responded positively, often enthusiastically, to the MI questionnaire at the end of the sketch. No one has offered a rationale for rejecting the total MI concept.)

"He who teaches is twice taught."

Introduction to "A School for Learning"

The following sketch gives only a key-hole view of a broad, comprehensive program. Its philosophy, psychology, and pedagogy are implicit in the narrative, briefly or obliquely mentioned in explanatory comments. Understanding is in the mind of the reader. If this little sketch strikes a responsive chord, it will suggest a larger, more detailed picture of the the possibilities inherent in Mutual Instruction (MI).

Educators generally are misled by the belief that motivation to learn is primarily intellectual. Research and empirical evidence suggests that an equally or even more powerful stimulus is social, that one of the strongest motives is not a selfish desire to learn for one's own benefit but to share learning with others. It is more stimulating as well as blessed to give than to receive help in learning.

This concept—learners who teach are "twice taught"--is the keystone of a theory of human development. It distributes the weight of total growth equally onto the two supporting pillars of cognitive and affective growth. Weakness and collapse of personality structure can be attributed to one-sided loading on intellectual training, as in traditional schooling, or a lop-sided emphasis on "social adjustment," so popular with Progressives and "life adjustment" proponents in past decades.

The MI educational structure teaches all students to use their learning in some way to help others. This design provides ample opportunities for all learners to develop and integrate their potential strengths of mind, body, and character.

E. M. Swengel
San Diego, October, 1988

"He who teaches, learns."

A SCHOOL FOR LEARNING

A small group of young children are about to being their formal schooling. Each has been individually interviewed by several teachers, the school nurse and psychologist, all of whom also interviewed parents to determine their child's readiness.

The group is met by a pair of guides, who take them on a tour of the school.

"Here is where you can draw, or work with clay, and weave something, or carve, and make models of things," explains Gracie, their 12-year-old guide, as they enter the Arts and Crafts Room. Children of all ages are at work; some younger ones watch fascinated as older students paint, sculpt, weave, print . . .

The tour directors finally lure their little charges out of this busy, colorful beehive. The sound of band music accompanies their march to the big Music Room.

"Here is where you learn to play an instrument, and to sing," announces 11-year-old Timmie, the male tour guide. "When you get as old and good as me, you can play in the varsity band—but you and your friends can also organize your own little band—you know, a combo. That's a lotta fun, too."

"But you learn to play some little instruments and the drums right away--if you want to," Gracie chimes in encouragingly.

"But I'd rather learn to dance first," announces a bouncy young 5-year-old.

"That you can do," assures Timmy, "only we dance in the gym."

With fingers to their lips, the tour guides lead the way into a large, carpeted, very quiet room, "the Reading and Writing Room, the Library," Gracie whispers. Young children with books or writing paper sit near older students who briefly give whispered help when necessary. More formal reading lessons are in progress in tutoring booths, an older tutor working with a younger tutee. From her office, the Language Arts teacher makes rounds of the study groups to see how things are going. Back at her desk, she receives students who come for brief conferences, or to file written and oral reports of their progress. Longer conferences are scheduled to work on reading and writing problems beyond tutors' competence. As in all the rooms devoted to specific disciplines, the teachers give the original instruction and assignments; tutors they have trained follow up with supplementary instruction, under teacher guidance and supervision.

After their tip-toe tour of this awesome room, heavy with intense absorption in the mystic encoding and decoding arts, the little ones look in on other rooms similarly equipped with tutoring carrels and tables, mostly round, for small-group

collaboration. Three, four, or five students around a table talk quietly, like diners in a restaurant, creating a low buzz of conversation that does not interfere with discussants at nearby tables, or with students working alone. Pupils may work alone in study carrels, but are also free to move around and visit, on topics of social and academic interest. Spontaneous conferences may erupt into argument, leading the participants to descend on the teacher for information, guidance, or arbitration. Some teachers work undisturbed at their desks, busy with their own reading and lesson planning, but are available for assistance as needed. The students appear to be mainly in charge of their own learning.

In the Math and Computer Room, students work with colored rods, blocks, puzzles, and games in addition to doing pencil-and-paper problems. A 14-year-old is teaching an 8-year-old to play chess. Every computer is in use. At most consoles, two students work together, especially if a younger is learning under the supervision of an experienced older.

The newcomers wander wide-eyed through a room with globes, maps, models of mountains and volcanoes, posters, drawings, murals, dolls in strange and fancy costumes, and dioramas (made by students) of scenes from the age of dinosaurs, of medieval castles, of Aztec temples and Amerindian lodges.

"You can learn about all kinds of people and places, all over the world, and a long time ago," Timmy explains about the Social Sciences room.

"But of course you can't really understand all you see here until you learn to read," Gracie cautions, casually.

Hearing this, a bright-eyed little girl frowns, and sighs in a timid voice:

"Oh, I don't think I could ever learn to read all those books."

"Oh, sure you will," Gracie reassures her. "Reading's not all that hard. I didn't think I could learn to read. In fact, I didn't even much want to, until some of the older kids I'd made friends with took hold of me. It's not hard when somebody works right along with you until you get the hang of it."

"Sure," Timmy chimes in. "Don't worry, kids. In this school, everybody teaches everybody else. If you want to learn something—and sometimes even when you don't think you want to—somebody is hanging around just dying to teach you."

"But what if I'm too dumb to learn?" queries a freckle-faced 6-year-old lad, not much acquainted with soap and water. "Me brudders 'n sisters, they wasn't never learnt much. They cut out soon as they could. Me old man says I'm even dumber 'n any of them was."

Gracie waves off such defeatism. Timmie, with a fraternal grip on the young doubter's shoulder, launches into a well-rehearsed but from-the-heart pep talk:

"Nobody is too dumb to learn—at least not in this school. Everybody can learn something, maybe not as much as somebody else, maybe not as fast. But you learned to walk, didn't you? And talk? That's not easy to learn, but you learned it by yourself, and you talk OK, kid. You dress yourself, tie your own shoes? Good! Anybody smart enough to learn all that stuff can learn what we'll teach you here. We can teach this stuff to anybody!

"Gee!" is the awestruck answer, still tinged with doubt. But eyes shine bright with hope.

Next stop is a Science Lab—twisted glass tubing, various sizes and shapes of jars, burners, models, plant collections, cages of mice and rats and insects, flower pots and seedling flats, aquaria and terraria—and a variety of odors mixing not unpleasantly.

At laboratory tables and in carrels, small groups are working, studying, measuring, testing—and arguing. Most small groups include pupils covering an age range of at least 4 years. Older students, after explaining their ideas as clearly as they can, listen patiently and respectfully to questions and suggestions from junior members of a research project.

Not uncommonly, a single research team will split up over a disagreement over procedure, and set up competing experiments to test divergent theories or methods. Loud crow the victorious experimenters when they succeed and the others fail. But as young researchers mature, they gradually come to understand their teachers' oft-repeated dictum: the only acceptable basis for pride in science is that you perhaps have discovered a bit of scientific truth, not that you've beaten somebody else. The more experienced young scientists have learned to end fruitless quarrels among violently partisan youngsters by lecturing them:

"Look, guys and gals! In science, the question is not Who is right, but What is right. Now quit arguing and get busy and use your heads to figure out the best way to find out." The olders take time to help the competing groups set up controlled experiments to test their differing hypotheses; or help them discipline their thinking so that by using known facts logically arranged, they can pre-determine the more fertile hypothesis, and check that one out first.

In the Press Room, pupils are duplicating, collating, and stapling a monthly student magazine. Around the desk of the young editor-in-chief rages a noisy debate over how to re-structure an awkward sentence. When the copy-editors

reach an impasse, they consult the Language Arts teacher, who directs them to find parallel examples in their style book, and leads them to agree on a suitable revision.

Each little visitor receives a just-off-the-press edition of Young Writers Journal, compiled of stories, poems, news items, and illustrations submitted by 5- through 10-year-olds.

"Of course, not just anything that anybody dashes off gets published, you understand," explains the editor of the current edition, just turned 13. "I mean, we've got standards. If you bring something in, we go over it with you and show you how to make it better, if it's not good enough to start with, and it probably won't be. Most kids have to do over their stuff two, three, maybe four or five times. But when it's good enough, we publish it, and practically every kid in school reads it."

"Y'know, I think we oughtta lower our standards," suggests an associate editor, 10 years old. "These kids work their tails off to get their stuff up to these high standards we got, and when we finally accept something, they think they've done something real big. They brag to all their friends, and then they want to break into print, and we get buried with stuff!" He points wearily at a bulging folder of manuscripts.

"Well, get some help with the copy-reading and interviewing," orders the senior editor. "Must be a dozen or more good kids crying to get on the editorial staff. Get more help and put out a bigger paper. We've sure got readers for everything we publish."

After a trip to the gym, where a folk dance group leads them through the Virginia Reel, and a visit to the lunch room (where student helpers slip them a cookie on the sly), the young enrollees return to their Home Room teacher.

"Now that you've seen just about every place you can go and all the things you can learn to do," she greets them, "where do you want to begin? What would you like to learn first?"

"Y' mean," asks little Freckle-Face, "we c'n do any of all that stuff we jus' seen--right now--and not go in 'n sit down wit' a bunch o' sissies 'n cut 'n paste colored papers 'n dumb stuff like dat?"

"Of course not," Teacher replies. "Of course you can start in any room you like. The teachers will help you get started on something you're ready for and would like to learn. Or, you can stay here with us, with children about your age

who've been here awhile. We have helpers from those rooms you visited. They come to our room to help us learn those things you saw in the other rooms. You can go there to learn some things, and come here to practice them and learn other things. But you can choose where you'd like to start."

Freckle-Face, with a good memory for landmarks and sense of direction, takes off like a shot, all by himself, for the gym, where he'd seen boys working out on the trampoline and tumbling mats. He'd spent his back-alley life climbing fences and jumping from fire-escapes and big packing crates. He'd always wanted to do "flip-flops" and had hurt himself landing on the pavement or hard dirt of vacant lots, his only playgrounds. A young gymnast, competent in forward and back flips, immediately takes an interest in the courageous and well-coordinated little fellow, and coaches him in a few fundamentals.

"Gee, kid," his mentor says admiringly, "you're a natural. Wait'll I tell coach."

And he runs to report his talent find. Coach is equally pleased, and writes a note to the Home Room teacher suggesting that Freckle Face come to the gym regularly to work with the tumbling team.

Shy little Laura summons courage to ask: "May I go the lie-berry and learn to read?"

Of course. A few minutes later, she is seated by 12-year-old Maria, who is going to be a reading teacher when she grows up, she informs Laura. Maria was helped to learn to read when only 5, and has been helping other beginners ever since—making her a veteran of 7 years' successful tutoring experience.

The girls work steadily. By noon, eager little Laura had skimmed and skipped through six to eight weeks of conventional readiness and pre-primer exercises. (The reading teacher had previously interviewed Laura, and discovered in about 16 seconds that she was bursting with curiosity about those curious marks that tell such exciting stories that go along with the pictures, and that she is ready for a crash course in beginning reading. The teacher pre-selected Maria as an appropriate tutor.)

Laura is too excited to eat much of her lunch, and rushes back to the "lie-berry" where another tutor--13-year-old Sally--in another two hours, has Laura going along pretty much on her own in simple picture-book primers. Laura cries when told it is time for her to go home, and is pacified only by being loaded with books for homework. She proudly reads through most of these to Maria and the reading teacher the next morning.

Laura stays on her intensive, single-minded reading jag for almost two months, until her book-hunger has driven her to being able to read simple stories fluently.

She reads and re-reads these to herself and to other beginners in the Library and her Home Room. Some of her listeners are not yet interested in doing their own reading, but enjoy hearing Laura read to them. Other beginning readers, not impelled to learn at Laura's pace, like to have her help them. Her tutors show her how to help by running her hand under the words as she reads, and pausing at familiar words which her listener/watcher may supply. She plays picture, letter, and word recognition games with her study-mates, and they discuss the stories Laura reads.

During a lesson with Maria, Laura stops reading, looks up, and wistfully asks: "When I get to be a big girl like you, Maria, can I be a reading teacher?"

"Why of course! Around here, you almost have to be a teacher. But you're already a little teacher, Laura. Every time you share a story you enjoy with somebody else, or tell somebody a word or the sound of a letter, you're teaching."

"But I mean, I really want to do the big job, like teaching somebody really to read, like you and Sally are teaching me. Grandma says I already read better than most kids in first and even some in second grade. And you taught me, you and Sally. Well, I guess Mrs. Clark has helped some, too," Laura concedes.

"Oh, we didn't teach you. You really taught yourself. We only helped," Maria demurs.

"Well, whatever you do, I want to do it too," Laura asserts, bright and firm.

Several months pass before Freckle-Face, now nearly 7, decides to tackle reading—and it is not a spontaneous or joyous decision. Besides spending over an hour a day with the tumblers, he also learns to tap dance, becomes a pretty good snare drummer, memorizes a lot of songs (although tending to shout them out rather than follow the melody). In math, he gets interested enough in numbers to count to 100 by 2s, 5s, and 10s, learns to add and subtract without carrying or exchanging. In shop, his specialty is making kites. But he avoids books and the Library as if they are instruments and a place of torture.

However, his favorite tumbling buddy invites him to join—as the kite expert--a science group planning to experiment with rockets launched from a kite-type space platform. A few days after he joins the project, an older boy tells him to look up a bit of information.

"Sorry, pal, I can't do that.....I can't read," he confesses.

His science buddies freeze, looking at their Kite Expert in disbelief. The senior scientist, all 11 years of him, lowers the boom:

"A great big kid like you, with the brains you got....you can't read!? Who ever heard of a scientist who can't read?! Get wise, kid. Go get somebody to

help you learn to read. And quick! Or get outta our project. We've only got room on this project for intelligent men."

Within 10 minutes, Freckles has located his 10-year-old friend who taught him to make kites. Together, they go to the Library and explain their problem to the reading teacher. She has been tracking Freckles, and has a reading program all ready for him, awaiting the inevitable time when he will come. She hands the boys some beginning materials full of solid scientific information, geared to bright but reluctant beginners. Within an hour, Freckles discovers that reading is not fearsomely difficult, but really rather fun.

"Geez! This'll be a breeze!" he sighs happily.

He does breeze, with occasional gusts of extra effort, through a normal year's work in a few months. And he gets to stay with the rocket project.

A little boy with brain damage is put happily to work in the Arts and Crafts Room, where in time he becomes a shop steward. He helps keep tools clean and materials in order. He is taught to sharpen tools and to use them correctly. Although unable to explain their use clearly in words, he gives impressively clear demonstrations. He prevents many a cut hand by stopping a child using a tool improperly; when in spite of his cautions, a slipped blade or a splinter draws blood, he is quick and adept at first aid—antiseptic and band-aid.

Under the guidance of the special education teacher, tutors help the boy learn all he is able to learn. With a fair sense of pitch, he loves to sing, even though he forgets the words of a song from one day to the next. He masters folk and square dances, and is very patient with partners who get confused.

Like all pupils in the school, he is expected to learn only what he can learn and shows some interest in learning, so he suffers no lasting frustration nor sense of failure. Since most of what he learns he is able to share with others, he earns his schoolmates' genuine respect and gratitude, to which most children add a certain quality of special fondness, as sensitive children are wont to do when they understand from first-hand experience the disabilities of a fellow-creature. They do all they can to help the little fellow, and they allow him to do all he possibly can for them.

Teachers find it easy and natural to discuss with students the learning problems of their schoolmates. Because learning to teach is a standard and continuing, built-in component of learning all subject matter and skills, every child continually deals with the uniqueness of other children, older and younger, in one-to-one and small-group situations. Students appreciate that every person is exceptional in different ways and in different degrees. One's own exceptionalities and those

of others are accepted as natural. If an exceptionality is in the gifted area of the ability continuum, the gift is accepted with humility and regarded as wealth to be shared. If classed as a deficiency or handicap, it is considered a challenge to be overcome or compensated for. But neither a sense of superiority nor inferiority becomes attached to any exceptionality, because everyone regards the MI school as a place of interdependent learning, where everyone helps others, so that all develop their special abilities. Success is improvement, not beating somebody or being better than others. By this criterion, everyone can succeed.

No matter what mental, emotional, or physical endowment a child may have, teachers always enlist a few students willing and able to work with the child, and win his confidence and cooperation. The teacher-tutor team discovers an active or latent interest or ability in the child. They plan and pursue an individualized learning program based on that, to assure that the pupil will succeed in and enjoy his work.

Teachers' main responsibilities are to plan individualized programs geared to each student's abilities and interests, to pair tutees with competent and congenial tutors, to organize efficient cooperative learning groups, and to balance each child's total program, not day by day nor even week by week, but at least year by year.

Planning each student's individualized curriculum planning becomes steadily simpler due to a natural filter-down process of motivation and learning. Teachers themselves have wide-ranging interests and considerable versatility. They are the role models for the most mature, capable students, who in turn are junior-sized heroes to the smaller fry. No matter what level of ability a youngster may have, real-life, working models of what he can become are right there in the school, at the next table or in a nearby room--accessible. Children naturally gravitate into friendships and working relationships which are mutually profitable. They increasingly take responsibility in planning their study programs modeled on those of the best students.

Occasionally an especially unattractive pupil enrolls--antagonistic or withdrawn, without visible interests or abilities of a positive sort. Such a child cannot long resist the warmth and ingenuity of a special task force of talented tutors who consider these "tough nuts" a delightful challenge to their tutorial prowess. They take these little rebels or lost souls under their collective wings, and somehow infuse decency and enthusiasm into their barren lives.

The MI school offers such a rich variety of meaningful activities that children development no permanent delinquencies. Any that they already have gradually

atrophy from disuse. A delinquent-prone child simply can find no one to identify with nor model himself after--no delinquent model, that is. Everywhere he looks, he finds the strong, aggressive students hard at work in projects that are fun and worthwhile, in the gym, the shop, the laboratories--even in the Library. No coercion, no rigid structure, no dominating adults to rebel or conspire against. Unloved waifs who have known only a world of hard knocks, antagonism, rebuff, restraint, and rejection are swept into a world of acceptance and achievement--and acclaim.

When they fail, this is accepted as an unnecessarily painful part of the learning experience; often also as an occasion for a Dutch-uncle dressing down:

"Gosh, kid, everyone goofs once in awhile. So what? Just try again! We don't care about your failures--unless you keep making the same ones. We just want to help you learn to do the job right--and do it right the first time, as often as you can. Now next time, pick something to try that's a little nearer your own size. And don't be so darn cocky and try to go it alone. No use finding things out the hard way. Get advice and help from us older, experienced operators."

Teachers coming into the system, and observers unacquainted with MI, worry that pupils will "learn wrong" with so much student-directed activity. However, students develop such a strong sense of responsibility for passing on accurate knowledge and high-level skills, that there is very little poor tutoring. Students are willing and eager to re-learn aright when their errors are pointed out. The close contacts among pupils, tutors, and supervising teachers (who provide tutors with appropriate materials and methods) make it possible to discover and correct errors and to identify problems almost as soon as they arise. Nothing amiss goes undetected and uncorrected for long, with both teachers and students dedicated to accuracy.

The pursuit of truth shines the bright light of reason and warm concern into all dark corners of head and heart.

The Mutual Instruction Concept Carried into Secondary Education, and Beyond

All subsequent schooling grows naturally from this elementary root. Students seek out whoever can help them--other students, teachers, community members. Study groups form spontaneously, plan and complete a project, dissolve and re-form to pursue interests generated by the completed project. Teachers—themselves scholars who keep abreast of their fields of specialization—advise on choosing and planning projects, help locate source material, supervise developments, and evaluate results.

The entire adult community becomes a large part of school for students 15 years of age and older. Businesses and professions should welcome some part-time help from well-prepared apprentices, and find work for them in stores, shops, factories, in transportation and communication, in law offices and courts, hospitals, jails, playgrounds--in all community activities, to learn first-hand the real-life problems and opportunities of their contemporary world.

As students become interested in possible careers, they will want to study subjects required to enter those fields, and to enter college or university, if required. The school provides self-instructional materials required for these careers, and teachers and community members engaged in these fields can supplement and enrich basic instruction as needed to update and expand it. In planning their advanced study programs (equivalent to grades 10 through 12), students cooperate with teachers, parents, and community members involved in careers of interest to students.

However, one subject is required of <u>all</u> teenagers, to prepare them for parenting: child development. Daily, or at least thrice-weekly, all students ages 15 through 18, work with pre-schoolers and the 5- through 7-year-olds. Direct, personal contacts are supplemented with more formal study of child development with the school psychologist, nurse, social science teachers, community members who work in child-related professions, and successful parents.

For students 14 to 18 years old, learning within the walls of the school need not--perhaps <u>should</u> not--take more than 4 to 5 hours daily. The balance can be better spent in the larger community, as suggested.

The formal school, from preschool child care through adult education, should be on the same campus, so that persons of all ages, infants to senior citizens, can conveniently interrelate. This Community Learning Center (Educational Park, as sometimes called) should serve around 1000 students in the K-12 range, and extend in both directions to include infant and child care and continuing adult education. The Center should be within a 1- to 2-mile walking distance of its patrons, and be open at least 12 hours a day, 6 days a week.

To become fully human, head and heart must learn to interact as an integrated unit. Learning how to do this is the most important knowledge that schools must teach, and it must be learned through first-hand experience, from infancy through adulthood. Hands-on instruction that nurtures this head-heart development is MI's "core curriculum." All students participate fully in it daily, throughout their school life. MI assures that these fundamental lessons of life are thoroughly learned.

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Rev. 9-88

QUESTIONNAIRE ON "A SCHOOL FOR LEARNING" (MUTUAL INSTRUCTION--MI)

Please encircle pertinent items, or fill blanks to give information. Mark so as to give your total experience. E.g., you may have been both Elementary and Secondary Teacher, plus Administrator, plus Parent, and are now a Professor or Consultant.

M F A: Teacher-in-training. B: Teacher: Elem'try; Secondary; Total Yrs. of Teaching: ....
C: Administrator: Elem'try; Secondary. Total Yrs. Adm: ..... Other profession: .....
D: Parent: No. of children in school: K-6th .... 7-9th .... 10-12th .... Coll/Univ: ....

The distinguishing, unique, central feature of "A School for Learning" is Mutual Instruction (MI). All children have continual opportunity and responsibility to help other children and to be helped by trained tutors. You are asked to compare a school based on this MI principle with any type of school which does not emphasize this kind and amount of student interaction.

In making comparisons, (1) assume the MI system has been operating long enough for administrative bugs to be worked out, and it now has general community and professional support; (2) compare long-term results for children starting in MI at age 5 and continuing through their high school senior year, 12th grade.

Please indicate the strength of your agreement or disagreement with the following positive, supportive statements, using a 7-point scale, with mid-points if you wish a finer scaling.

DISAGREE			UNDECIDED	AGREE		
Totally	Strongly	Weakly		Weakly	Strongly	Totally
1	2	3	4*	5	6	7
Weaknesses outweigh strengths			Pros & Cons balance	Strengths outweigh weaknesses		

*(Please avoid if possible using a "pure" 4. Use the 3.5 or 4.5 mid-points to weight an Undecided response slightly toward Disagreement or Agreement.)

	1	2	3	4	5	6	7	
1.								1. As a teacher, I would prefer to work in an MI school.
2.								2. As a parent, I would choose an MI school for my children.
3.								3. Students would spend time more efficiently in an MI school.
4.								4. MI would be no more costly than conventional schooling.
5.								5. Administration of an MI school is different but possible.
6.								6. Both normal and exceptional children could get more individual attention in an MI school.
7.								7. Teaching (tutoring) is a highly effective method of learning, stimulating increased interest and understanding.
8.								8. Under MI, students become more independent and self-directed, but also more cooperative with teachers and fellow students.
9.								9. Discipline problems would be easier to handle in MI.
10.								10. Students in MI would feel that school is a more important, meaningful, and relevant part of their lives.
11.								11. Under MI, students could better balance their learning among physical, (athletic), artistic, and academic (3Rs, etc.) skills.

Comments: